



NCERT NOTES

GEOGRAPHY

12th Standard

Fundamentals of
Human Geography



Content Sheet

Unit: I	3
1. Human Geography: Nature and Scope	4
Unit: II	8
2. The World Population: Distribution, Density and Growth	9
3. Population Composition	16
4. Human Development	21
Unit: III	25
5. Primary Activities	26
6. Secondary Activities	36
7. Tertiary and Quaternary Activities	44
8. Transport and Communication	52
9. International Trade	65
Unit: IV	74
10. Human Settlements	75



Unit: I



1

Human Geography: Nature and Scope

Human geography studies “the relationship between the physical/natural and the human worlds, the spatial distributions of human phenomena and how they come about, the social and economic differences between different parts of the world”.

Nomenclature used in Human Geography:

- Regions, villages, towns have been described as ‘**organisms**’.
- German geographers describe the ‘state/country’ as a ‘**living organism**’.
- **Networks of road, railways and water ways** have often been described as “**arteries of circulation**”.

Nature of Human Geography:

- **Human geography** studies the **inter-relationship** between the **physical environment** and **socio-cultural environment** created by human beings through mutual interaction with each other.
- Houses, villages, cities, road-rail networks, industries, farms, ports, items of our daily use and all other elements of material culture have been created by human beings using the resources provided by the physical environment.

Naturalisation of Humans and Humanisation of Nature:

- **Human beings interact with their physical environment** with the help of technology. It is not important what human beings produce and create but it is extremely important ‘with the help of what tools and techniques do they produce and create’.

- Human beings were able to develop technology after they developed better understanding of natural laws.
- **Technology indicates the level of cultural development of society.** For example, the understanding of concepts of friction and heat helped Human beings discover fire.
- Knowledge about Nature is extremely important to develop technology and technology loosens the shackles of environment on human beings. In the early stages of humans, interactions with their natural environment were greatly influenced by it. They adapted to dictates of nature because the level of technology was very low, and the stage of human social development was also primitive. This type of **interaction** between **primitive human society** and **strong forces of nature** was termed as **environmental determinism**.
- In primitive human society nature is considered powerful force, worshipped, revered and conserved. There is **direct dependence of human beings on nature** for resources which sustain them. The **physical environment for such societies becomes the “Mother Nature”**.
- With social and cultural development, humans develop better and more efficient technology. They move from a state of necessity to a state of freedom.
- The **imprints of human activities are created everywhere**; health resorts on highlands, huge urban sprawls, fields, orchards and pastures in plains and rolling hills, ports on the coasts, oceanic routes on the oceanic surface and satellites in the space. **The earlier scholars termed this as possibilism.**

- Nature provides opportunities and human being make use of these and slowly nature gets humanised and starts bearing the imprints of human endeavour.
- A geographer, **Griffith Taylor** introduced another concept which reflects a **middle path** (Madhya Marg) between the two ideas of environmental determinism and possibilism. He termed it as **Neo-determinism** or **stop and go determinism**.
 - The concept shows that **neither is there a situation of absolute necessity (environmental determinism) nor is there a condition of absolute freedom (possibilism)**. It means that human beings can conquer nature by obeying it.
 - They have to **respond to the red signals** and can proceed in their pursuits of development when **nature permits the modifications**. It means that possibilities can be created within the limits which do not damage the environment.
 - There is no free run without accidents. The free run which the developed economies attempted to take has already resulted in the greenhouse effect, ozone layer depletion, global warming, receding glaciers and degrading lands.
 - The **neo-determinism** conceptually attempts to bring a **balance nullifying the 'either' 'or' dichotomy**.

Evolution of Human Geography:

The process of adaptation, adjustment with and modification of the environment started with the appearance of human beings over the surface of the earth in different ecological niches.

Table 1.1: Broad Stages and Thrust of Human Geography

Period	Approaches	Broad Features
Early Colonial period	Exploration and description	Imperial and trade interests prompted the discovery and exploration of new areas. An encyclopaedic description of the area formed an important aspect of the geographers account.
Later Colonial period	Regional analysis	Elaborate description of all aspects of a region were undertaken. The Idea was that all the regions were part of a whole. i.e. (the earth): so. understanding the parts In totality would lead to an understanding of the whole.



1930s through the Inter-War period	Areal differentiation	The focus was on identifying the uniqueness of any region and understanding how and why it was different from others.
Late 1950s to the late 1960s	Spatial organisation	Marked by the use of computers and sophisticated statistical tools. Laws of physics were often applied to map and analyse human phenomena. This phase was called the quantitative revolution. The main objective was to identify mappable patterns for different human activities.
1970s	Emergence of humanistic, radical and behavioural schools	Discontentment with the quantitative revolution and its dehumanised manner of doing geography led to the emergence of three new schools of thought of human geography in the 1970s. Human geography was made more relevant to the socio-political reality by the emergence of these schools of thought. Consult the box below to know a little bit more about these schools of thought
1990s	Post-modernism in geography	The grand generalisations and the applicability of universal theories to explain the human conditions were questioned. The Importance of understanding each local context in its own right was emphasised.

Fields and sub fields of human geography:

- Human geography attempts to explain the relationship between all elements of human life and the space they occur over.
- Thus, human geography assumes a highly inter-disciplinary nature.
- It develops close interface with other sister disciplines in social sciences in order to understand and explain human elements on the surface of the earth.

Interesting Points:

- **Various Definitions of the Human Geography:**
 - “Human geography is the synthetic study of relationship between human societies and earth’s surface” – **Ratzel**.
 - “Human geography is the study of “the changing relationship between the unresting man and the unstable earth.” - **Ellen C. Semple**.
- **Welfare or humanistic School of thought:** In human geography, it was mainly **concerned with the different**

aspects of social well-being of the people. These included aspects such as housing, health and education.

- **Radical School of thought:** It employed **Marxian theory to explain the basic cause of poverty, deprivation and social inequality**. Contemporary social problems were related to the development of capitalism.
- **Behavioural School of thought:** It laid great **emphasis on lived experience** and also on the perception of space by social categories based on ethnicity, race and religion, etc.



Unit: II

The World Population: Distribution, Density and Growth



The people of a country are its real wealth as they are the actual resources and make use of the country's other resources and decide its policies.

Patterns of Population Distribution in the World:

The Patterns of population distribution and density help us to understand the **demographic characteristics** of any area.

Population Distribution:

- It refers to the way **people are spaced over the earth's surface**.
- Broadly, 90 per cent of the world population lives in about 10 per cent of its land area.
- The 10 most populous countries of the world contribute about 60 per cent of the world's population.

Density of Population:

- It is the ratio between the number of people to the size of land.
- It is usually measured in persons per sq km.

Factors influencing the Distribution of Population

Geographic Factors:

- **Availability of Water:**
 - It is important for life and people prefer to live in areas where fresh water is easily available.
 - Water is used for drinking, bathing and cooking – and also for cattle, crops, industries and navigation.
- **Landforms:**
 - People prefer living on **flat plains and gentle slopes** because such areas are **favourable for the production**

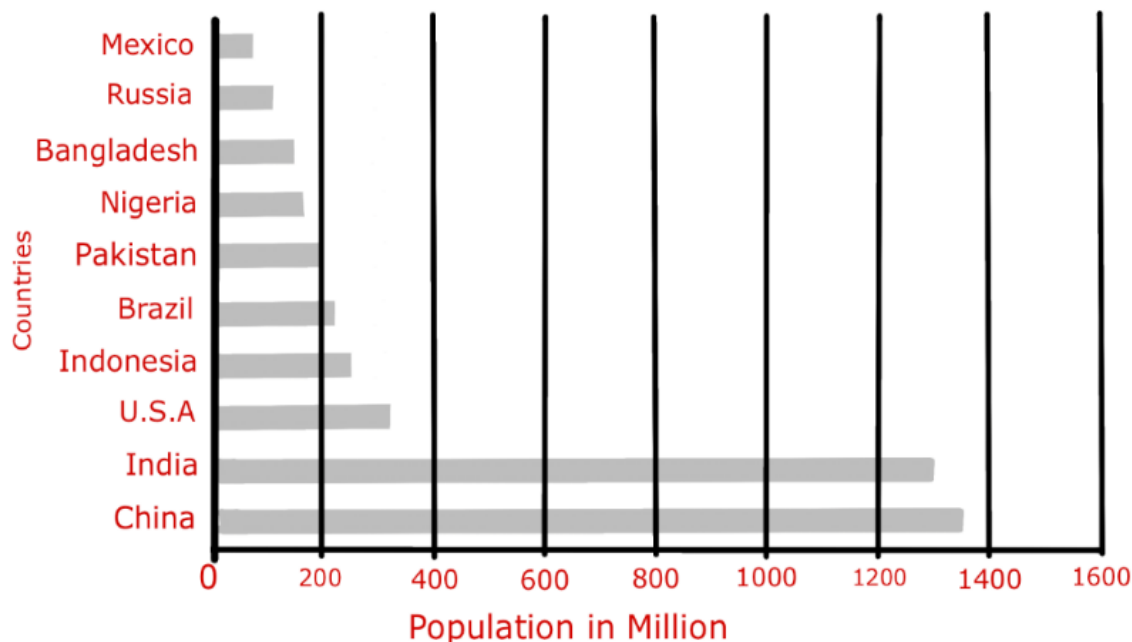


Fig. 2.1: Most Populous Countries

of crops and to build roads and industries.

- The **mountainous and hilly areas hinder the development of transport network** and hence initially do not favour agricultural and industrial development. So, these areas tend to be less populated.
- The **Ganga plains are among the most densely populated areas** of the world while the mountains zones in the Himalayas are scarcely populated.
- **Climate:**
 - An **extreme climate such as very hot or cold deserts are uncomfortable** for human habitation and have low population.
 - Areas with a comfortable climate, where there is not much seasonal variation attract more people. For example - Mediterranean regions were inhabited from early periods in history due to their pleasant climate.
- **Soils:**
 - **Fertile soils** are important for **agricultural and allied activities.**
 - The areas which have fertile loamy soils have more people as these can support intensive agriculture.

Economic Factors

- **Minerals:**
 - **Areas with mineral deposits attract industries and generate employment.**

- The **skilled and semi-skilled workers move to these areas** and make them densely populated such as **Katanga Zambia copper belt in Africa.**

- **Urbanisation:**

- **Cities offer better employment opportunities, educational and medical facilities,** better means of transport and communication.
- Good civic amenities and the attraction of city life draw people to the cities and leads to rural to urban migration and cities grow in size.

- **Industrialisation:**

- Industrial belts **provide job opportunities and attract large numbers of people** which includes not just factory workers but also transport operators, shopkeepers, bank employees, doctors, teachers and other service providers.
- The Kobe-Osaka region of Japan is thickly populated because of the presence of a number of industries.

Social and Cultural Factors:

- Some places attract more people because they have **religious or cultural significance.**
- People tend to move away from places where there is social and political unrest.
- Sometimes governments offer incentives to people to live in sparsely populated areas or move away from overcrowded places.

Basic Concepts of Population Geography

Growth of Population: Change of population in particular area between two points of time is known as growth of population.

Growth Rate of Population: This is the change of population expressed in percentage.

Natural Growth of Population:

- This is the population increased by difference between births and deaths in a particular region between two points of time.
- **Natural Growth** = Births – Deaths
- **Actual Growth of Population:** Births – Deaths + In Migration – Out Migration.

Positive Growth of Population: This happens when the **birth rate is more than the death rate** between two points of time or when **people** from other countries **migrate permanently** to a region.

Negative Growth of Population: If the population decreases between two points of time it is known as negative growth of population. It occurs when the **birth rate falls below the death rate** or **people migrate to other countries**.

Population Growth:

- The **population growth or population change refers to the change in number of inhabitants of a territory** during a specific period of time. This change may be **positive or negative**.
- It can be **expressed either in terms of absolute numbers or in terms of percentage**.
- Population change in an area is an important indicator of economic development, social upliftment and historical and cultural background of the region.

Components of Population Change:

There are three components of population change – births, deaths and migration.

The crude birth rate (CBR):

It is expressed as **number of live births in a year per thousand of population**. It is calculated as:

$$CBR = \frac{Bi}{p} \times 1000$$

Here, CBR = Crude Birth Rate; Bi = live births during the year; P=Mid-year population of the area.

Death Rate:

- **Crude Death Rate (CDR):** It is a **simple method of measuring mortality of any area** and is expressed in terms of **number of deaths in a particular year per thousand** of population in a particular region.

CDR is calculated as:

$$\text{CDR} = \frac{D}{P} \times 1000$$

Here, CDR=Crude Death Rate; D= Number of deaths; P=Estimated mid-year population of that year.

- By and large mortality rates are affected by the region's demographic structure, social advancement and levels of its economic development.

Migration:

- When **people move from one place to another**, the **place they move from** is called the **Place of Origin** and the **place they move to** is called the **Place of Destination**. The place of origin shows a decrease in population while the population increases in the place of destination.
- Migration may be interpreted as a spontaneous effort to achieve a better balance between population and resources.
- Migration may be permanent, temporary or seasonal.
- It may take place from rural-to-rural areas, rural to urban areas, urban to urban areas and urban to rural areas.
- Migrants who **move into a new place** are called **Immigrants**.
- Migrants who **move out of a place** are called **Emigrants**.

Factors that influence Migration:

- **The Push factors:** It make the **place of origin seem less attractive** for reasons like unemployment, poor living conditions, political turmoil, unpleasant climate, etc.

- **The Pull factors:** It make the **place of destination seem more attractive** than the place of origin for reasons like better job opportunities and living conditions, peace and stability, security of life and property and pleasant climate.

Trends in Population Growth:

The **population on the earth** is more than **seven billion** and has grown to this size over centuries. In the early periods population of the world grew very slowly. It is only during the last few hundred years that population has increased at an alarming rate.

- Initially after the **evolution and introduction of agriculture about 12,000 to 8,000 years ago**, the **size of population was small** – roughly 8 million.
- In the **first century A.D.**, it was **below 300 million**.
- The **expanding world trade during the sixteenth and seventeenth century**, set the stage for **rapid population growth**.
- **Around 1750**, at the dawn of the **Industrial Revolution**, the world population was 550 million.
- **World population exploded in the eighteenth century after the Industrial Revolution**.
- Technological advancement achieved so far helped in the reduction of death rate and provided a stage for accelerated population growth.

Doubling Time of World Population:

- It took **more than a million years** for the human population **to attain the one billion mark**. But it took only 12 years for it to rise from 5 billion to 6 billion.

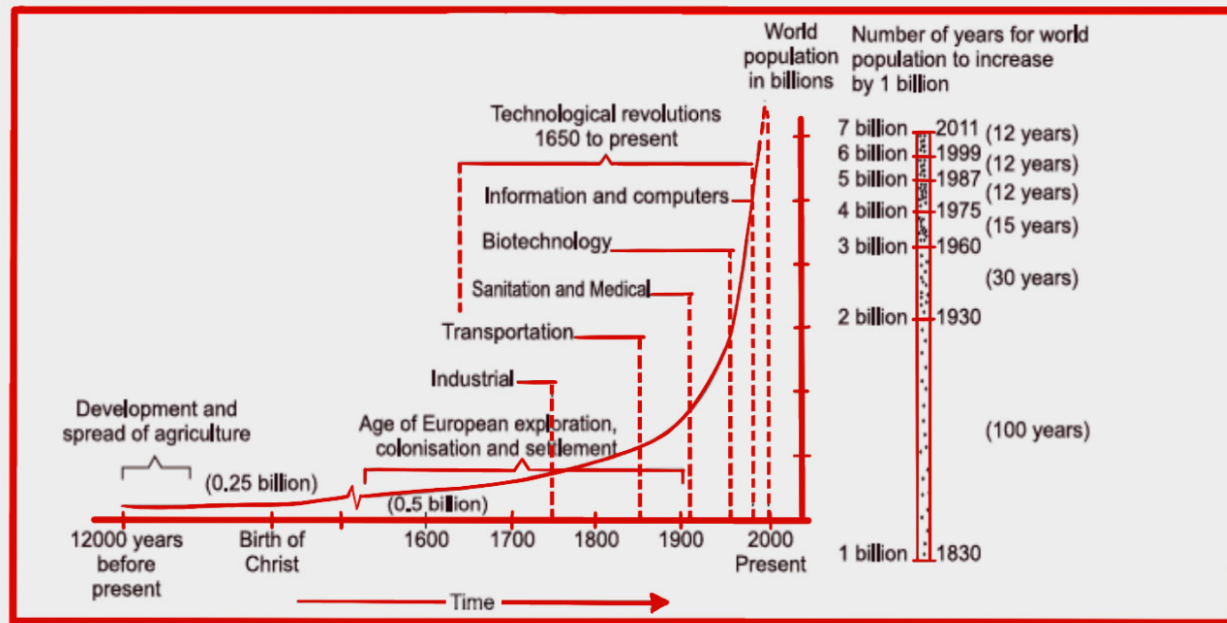


Fig. 2.2: Resource, Technology and Population Growth

Table 2.1: Doubling Time of World Population

Period	Population	Time in which Population Doubles
10.000 B.C.	5 million	
1650 A.D.	500 million	1.500 years
1804 A.D.	1.000 million	154 years
1927 A. D.	2.000 million	123 years
1974 A. D.	4.000 million	47 years

- **Variation among regions in doubling:** Developed countries take more time to double their population as compared to developing countries.

Spatial Pattern of Population Change:

The **growth of population is low in developed countries** as compared to developing countries. There is negative correlation between economic development and population growth. Although the annual rate of population change seems to be low, but it is actually not so because:

- When a **small annual rate is applied to a very large population**, it will lead to a **large population change**.
- Even if the growth rate continues to decline, the total population grows each year. The infant mortality rate may have increased as has the death rate during childbirth.

Impact of Population Change:

- A small increase in population is desirable in a growing economy. However, population growth beyond a certain level leads to problems. The most serious problem is of the depletion of resources.
- It indicates that resources that had supported a population earlier are now insufficient to maintain the population.
- Population decline is also a matter of concern.

Demographic Transition:

Demographic transition theory can be used to **describe and predict the future population of any area**. The theory tells

that **population of any region changes from high births and high deaths to low births and low deaths** as society progresses from rural agrarian and illiterate to urban industrial and literate society. These **changes occur in stages** which are collectively known as the **demographic cycle**.



Three Stage Model of Demographic Transition

First Stage:

- It has **high fertility** and **high mortality** because **people reproduce more** to compensate for the deaths due to epidemics and variable food supply.
- The population growth is slow and **most of the people are engaged in agriculture** where large families are an asset.
- **Life expectancy is low**, people are mostly illiterate and have low levels of technology.
- Two hundred years ago all the countries of the world were in this stage.

Second Stage:

- **Fertility remains high** in the **beginning of second stage**, but it declines with time which is **accompanied by reduced mortality rate**.
- The net addition of population is high because improvements in sanitation and health conditions lead to decline in mortality.

Third Stage:

- **Both fertility and mortality decline considerably.**
- The population is either stable or grows slowly.
- The **population becomes urbanised**, literate and has high technical knowhow and deliberately controls the family size.
- Human beings are extremely flexible and are able to adjust their fertility.

Population Control Measures:

- **Family planning:** It is the **spacing or preventing the birth of children**. Access to family planning services is a significant factor in limiting population growth and improving women's health.
- Propaganda, free availability of contraceptives and tax disincentives for large families are some other measures.

Thomas Malthus in his theory (1798) stated that **the number of people would increase faster than the food supply further increase** would result in a population crash caused by famine, disease and war. The preventive checks are better than the physical checks. For the sustainability of our resources, the world will have to control the rapid population increase.

Interesting Points:

- **Human population increased more than ten times** in the past 500 hundred years.
- In the twentieth century itself the population has increased four times.
- The annual population growth rate in India is 1.64 per cent.

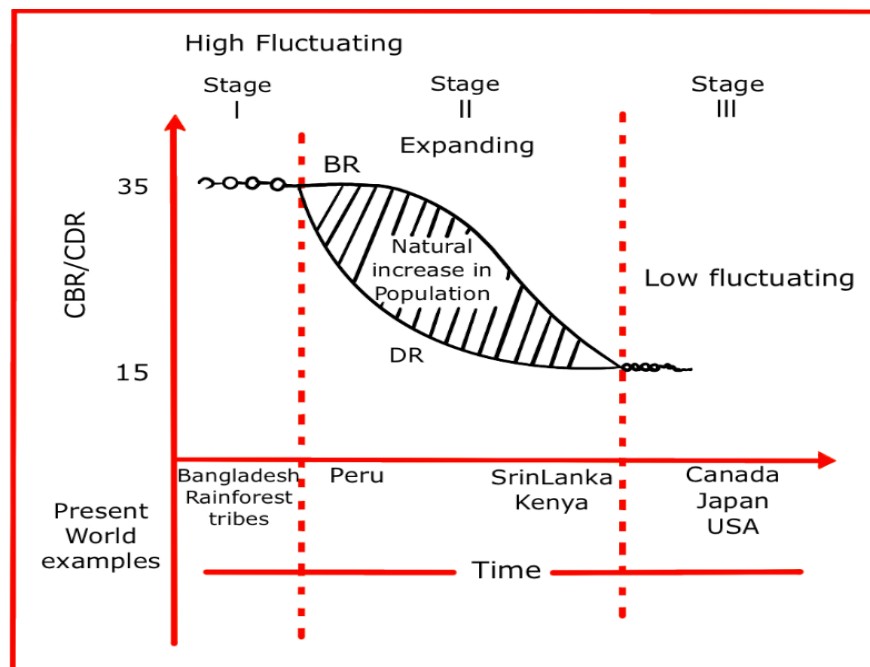


Fig. 2.3: Demographic Transition Theory



3

Population Composition

People of any country are diverse in many respects. Each person is unique in her/his own way. People can be distinguished by their age, sex and their place of residence. Some of the other distinguishing attributes of the population are occupation, education and life expectancy.

Sex Composition:

- The **number of women and men in a country is an important demographic characteristic.**
- The **ratio between the number of women and men** in the population is called the **Sex Ratio.**
- In India, the sex ratio is worked out using the formula:

$$\frac{\text{Female Population}}{\text{Male Population}} \times 1000$$

or the number of females per thousand males.

- The sex ratio is an important information about the status of women in a country.

Reasons for Lower Sex Ratio:

- **Gender discrimination:** In regions where practice of female foeticide, female infanticide and domestic violence against women turned poor sex ratio.
- **Lower socio-economic status of women** in these areas.

Natural Advantage VS Social Disadvantage: Females have a biological advantage over males as they tend to be more resilient than males, yet this advantage is cancelled out by the social disadvantages and discriminations that they face.

World Pattern of Sex Ratio:

- On an average, the world population reflects a sex ratio of 102 males per 100 females.
- The **highest sex ratio** in the world has been recorded in **Latvia** where there are **85 males per 100 females.** In contrast, in **Qatar** there are **311 males per 100 females.**
- The sex ratio is favourable for females in 139 countries of the world and unfavourable for them in the remaining 72 countries listed by the United Nations.
- In general, **Asia has a low sex ratio.**
- **Greater part of Europe (including Russia):** Males are in minority, which is attributed to better status of women, and an excessively male-dominated out-migration to different parts of the world in the past.

Age Structure:

- Age structure represents the **number of people of different age groups.**
- It is an important indicator of population composition:
 - **Large Population:** A large size of population in the age group of **15-59.**
 - **Aging Population:** A greater proportion of population **above 60 years** which requires more expenditure on health care facilities.
 - **Youthful Population:** High proportion of young population would mean that the region has a high birth rate.

Age-Sex Pyramid:

- The **age-sex structure** of a population refers to the **number of females and males in different age groups.**

- A population pyramid is used to show the age-sex structure of the population.
- The **shape of the population pyramid reflects the characteristics** of the population.
- The left side shows the percentage of males while the right side shows the percentage of women in each age group.
- **Expanding Population – Case of Nigeria:**
- The age-sex pyramid is a triangular shaped pyramid with a **wide base and is typical of less developed countries**.
- These have larger populations in lower age groups due to high birth rates.
- The pyramids for Bangladesh and Mexico looks the same.

Constant Population – Case of Australia:

- The age-sex pyramid is **bell shaped and tapered towards the top**.
- This shows birth and death rates are almost equal leading to a near constant population.

Declining Populations – Case of Japan:

- The pyramid has a **narrow base and a tapered top** showing low birth and death rates.
- The population growth in developed countries is usually zero or negative.

Rural Urban Composition:

This **division is based on the residence**. It is necessary because **rural and urban**

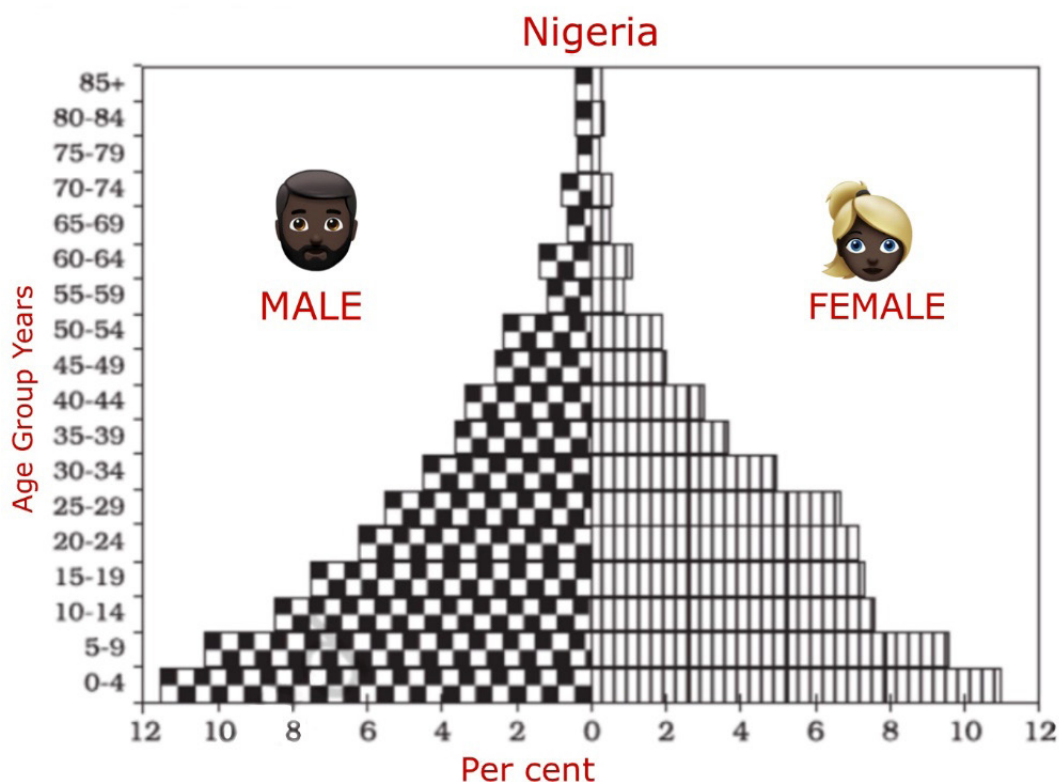


Fig. 3.1: Expanding Population

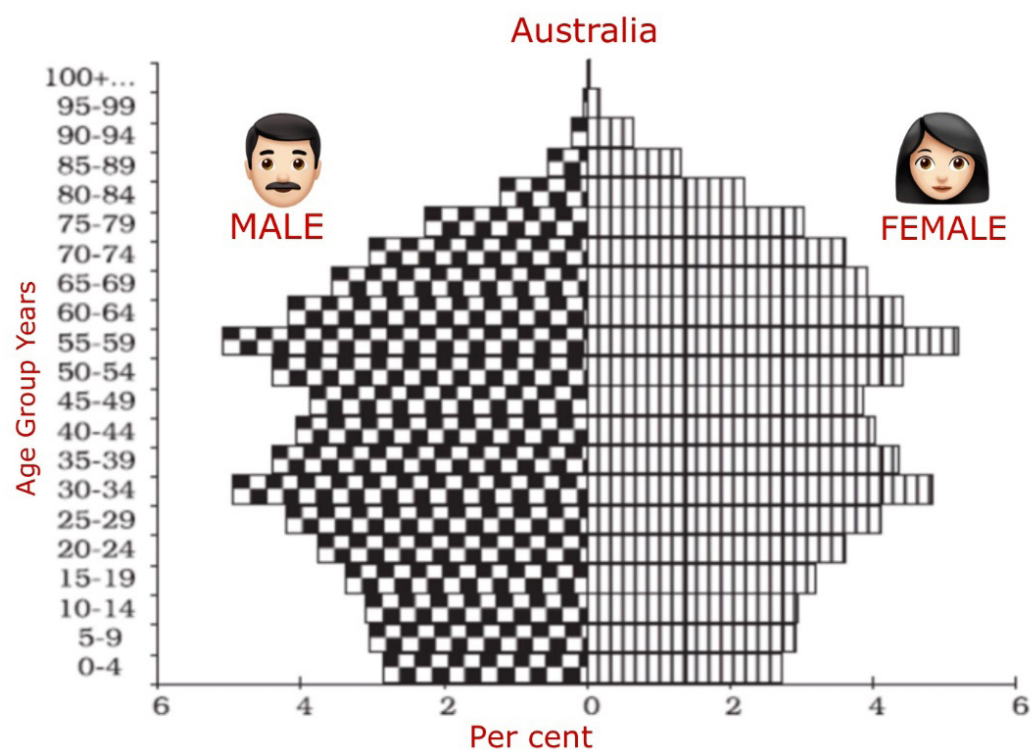


Fig. 3.2: Constant Population

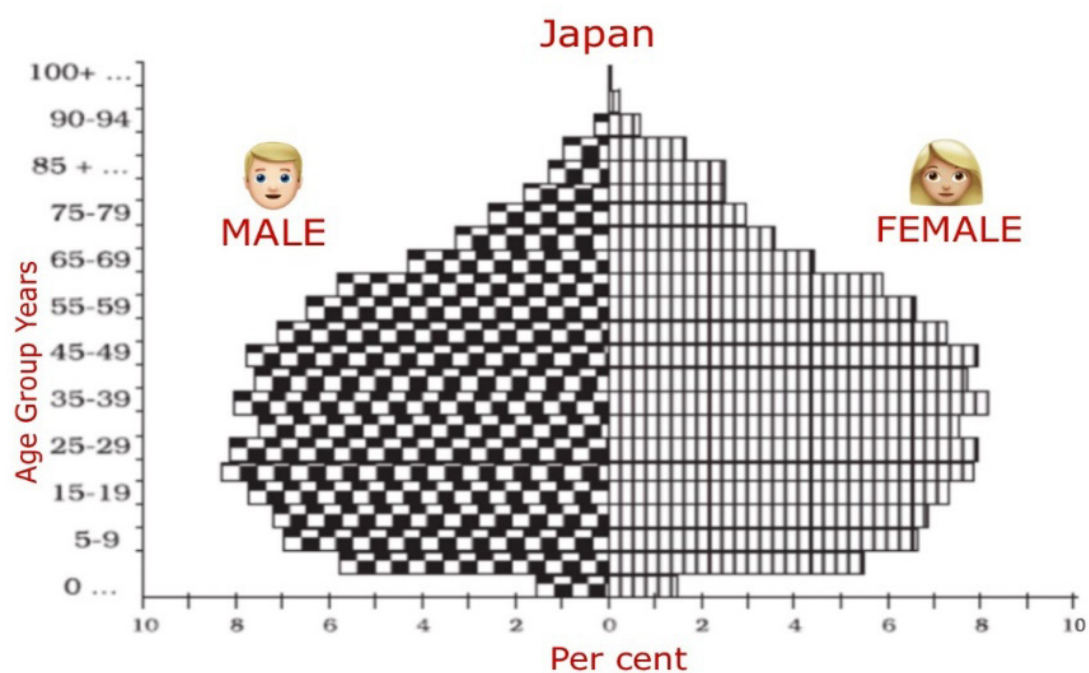


Fig. 3.3: Declining Population

lifestyles differ from each other in terms of their livelihood and social conditions. The age-sex-occupational structure, density of population and level of development vary between rural and urban areas.

- **In general terms:**
 - **Rural areas:** They are those where **people are engaged in primary activities.**
 - **Urban areas:** They are those when **majority of the working population is engaged in non-primary activities.**
- **In Western countries:**
 - **Males outnumber females in rural areas and females outnumber the males in urban areas.**
 - For example - The excess of females in urban areas of USA, Canada and Europe is the result of influx of females from rural areas to avail of the vast job opportunities.
- **Sex ratio in Asian urban areas:**
 - It remains **male dominated** due to the predominance of male migration.
 - In countries like India, female participation in farming activity in rural area is fairly high.
 - Shortage of housing, high cost of living, paucity of job opportunities and lack of security in cities, discourage women to migrate from rural to urban areas.

Literacy:

- Proportion of literate population of a country is an indicator of **its socio-economic development** as it reveals the standard of living, social status of females, availability of educational facilities and policies of government.

- Level of economic development is both a cause and consequence of literacy.
- In India – **literacy rate** denotes the **percentage of population above 7 years of age, who is able to read, write and have the ability to do arithmetic calculations** with understanding.

Occupational Structure:

The **working population (women and men of the age group – 15 to 59)** take part in various occupations ranging from agriculture, forestry, fishing, manufacturing construction, commercial transport, services, communication and other unclassified services.

- **Types of Economic Activities:**
 - **Primary Activity:** Such as agriculture, forestry, fishing and mining.
 - **Secondary Activities:** It relates to **manufacturing and industrial activities.**
 - **Tertiary Activities:** It includes activities like trade, transport, communication and other services.
 - **Quaternary Activities:** It includes the **jobs related to research**, information technology and developing ideas.
- The proportion of working population engaged in these above four sectors is a good indicator of the levels of economic development of a nation because only a developed economy with industries and infrastructure can accommodate more workers in the secondary, tertiary and quaternary sector.
- If the economy is still in the primitive stages, then the proportion of people engaged in primary activities would be high as it involves extraction of natural resources.



Interesting Points:

- **Ageing Population:** It is the process by which the **share of the older population becomes proportionally larger**. This is a new phenomenon of the twentieth century. In most of the developed

countries of the world, population in higher age groups has increased due to increased life expectancy. With a reduction in birth rates, the proportion of children in the population has declined.



Human development or the human development approach is about expanding the richness of human life, rather than simply the richness of the economy in which human beings live. It is an approach that is focused on people and their opportunities and choices.

Growth and Development:

Both growth and development refer to changes over a period of time.

- **Growth:**
 - It is **quantitative and value neutral**.
 - The change may be either positive (showing an increase) or negative (indicating a decrease).
- **Development:**
 - It means a **qualitative change** which is always value positive. This means that development cannot take place unless there is an increment or addition to the existing conditions.
 - The positive growth does not always lead to development. Development occurs when there is a **positive change in quality**. For example – The city has grown if the population of a city grows from one lakh to two lakhs over a period of time. However, if a facility like housing, provision of basic services and other characteristics remain the same, then this growth has not been accompanied by development.

Important aspects of Development: Some aspects are the quality-of-life people enjoy in a country, the opportunities they have and freedoms they enjoy.

- These ideas were clearly spelt out for the first time in the late eighties and early nineties.

- The works of two South Asian economists, **Mahbub-ul-Haqq and Amartya Sen** are important in this regard.

Concept of Human Development:

- It was **introduced by Dr Mahbub-ul-Haq** who has described human development as **development that enlarges people's choices** and improves their lives. People are central to all development under this concept.
- **Basic goal of Development:** To **create conditions where people can live meaningful lives**. A meaningful life is not just a long life, but it means people must be healthy, be able to develop their talents, participate in society and be free to achieve their goals.
- **Key areas in Human Development:** Access to resources, health and education as leading a long and healthy life, being able to gain knowledge and having enough means to be able to live a decent life.
- Building people's capabilities in the areas of health, education and access to resources is important in enlarging their choices. If people do not have capabilities in these areas, their choices also get limited. **For example** – An uneducated child cannot make the choice to be a doctor because her choice has got limited by her lack of education.

Four Pillars of Human Development:

The idea of human development is supported by:

Equity:

- Equity refers to **making equal access to opportunities available to everybody**.

The opportunities available to people must be equal irrespective of their gender, race, income and in the Indian case, caste too.

- For example, most of the school dropouts in India belong to women, and socially and economically backward groups. This shows how the choices of these groups get limited by not having access to knowledge.

Sustainability:

- Sustainability means **continuity in the availability of opportunities**.
- To have sustainable human development, each generation must have the same opportunities. All environmental, financial and human resources must be used keeping in mind the future. Misuse of any of these resources will lead to fewer opportunities for future generations.
- For example - If a community does not stress the importance of sending its girl children to school, many opportunities will be lost to these young women when they grow up. Their career choices will be severely curtailed, and this would affect other aspects of their lives.

Productivity:

- Productivity means **human labour productivity or productivity in terms of human work**. Such productivity must be constantly enriched by building capabilities in people.
- The Productivity can be increased by putting efforts in increasing their knowledge, providing better health facilities ultimately leads to better work efficiency.

Empowerment:

- **Empowerment means to have the power to make choices**. Such power comes from increasing freedom and capability.
- Good governance and people-oriented policies are required to empower people. The empowerment of socially and economically disadvantaged groups is of special importance.

Human Development Approaches

Income Approach:

- This is one of the oldest approaches to human development. **Human development is seen as being linked to income**.
- The idea is that the level of income reflects the level of freedom an individual enjoys.
- Higher the level of income, the higher is the level of human development.

Welfare Approach:

- This approach looks at **human beings as beneficiaries** or targets of all development activities.
- The approach argues for higher government expenditure on education, health, social secondary and amenities.
- People are not participants in development but only passive recipients. The government is responsible for increasing levels of human development by maximising expenditure on welfare.

Basic Needs Approach:

- This approach was initially proposed by the International Labour Organisation (ILO). **Six basic needs** i.e.: **health, education, food, water supply, sanitation, and housing** were identified.

- The question of human choices is ignored, and the emphasis is on the provision of basic needs of defined sections.

Capability Approach:

- This approach is associated with **Prof. Amartya Sen**. Building human capabilities in the areas of health, education and access to resources is the key to increasing human development.

Measuring Human Development:

- The **human development index (HDI)** ranks the countries based on their performance in the key areas of **health, education and access to resources**. These rankings are based on a score between **0 to 1** that a country earns from its record in the key areas of human development.
- **Key areas of Assessment:**
 - **Health:** It consider the **life expectancy at birth**. (A higher life expectancy means that people have a greater chance of living longer and healthier lives)
 - **Education:** The **adult literacy rate and the gross enrolment ratio** represent access to knowledge. The number of adults who are able to read and write and the number of children enrolled in schools show how easy or difficult it is to access knowledge in a particular country.
 - **Access to resources:** It is measured in **terms of purchasing power** (in U.S. dollars).
- The human development index is a sum total of the weights assigned to all these dimensions.

- **Weightage:** Each of these dimensions is given a weightage of **1/3**.
- The closer a score is to one, the greater is the level of human development. Therefore, a score of **0.983** would be considered very high while **0.268** would mean a very low level of human development.

The Human Poverty Index:

- It is **related to the human development index** and measures the shortfall in human development. It is **non-income measure**.
- The probability of not surviving till the age of 40, the adult illiteracy rate, the number of people who do not have access to clean water, and the number of small children who are underweight are all taken into account to show the shortfall in human development in any region. Often the **human poverty index is more revealing** than the human development index.

International Comparisons:

- **Size of the territory and per capita income** are not directly related to human development.
- Often smaller countries have done better than larger ones in human development. Similarly, relatively poorer nations have been ranked higher than richer neighbours in terms of human development.
- For example:
 - Sri Lanka, Trinidad and Tobago have a higher rank than India in the human development index despite having smaller economies.

- Similarly, within India, Kerala performs much better than Punjab and Gujarat in human development despite having lower per capita income.

Level of Human Development

High Level of Human Development Group:

- These **countries invested lot in social sector infrastructure** like providing education and healthcare and it has been an important government priority.
- A higher investment in people and good governance has set this group of countries apart from the others.

Medium Development Group:

- The countries with medium levels of human development form the largest group.
- Most of these are countries which have emerged in the period after the Second World War. Some countries from this group were former colonies while many others have emerged after the breakup of the erstwhile Soviet Union in 1990.
- Most of these countries have a **much higher social diversity** than the countries with higher human development scores.

Lower Development Groups:

- A large proportion of these are small countries which have been going through **political turmoil and social instability** in the form of civil war, famine or a high incidence of diseases.

Steps to improve conditions of countries:

- Improve pattern on government expenditure on social infrastructure and rising standard of living.
- Stable political environment for growth and development.
- Distribution of the country's resources to be more equitable.
- **More spending on social sectors:** For example - the places with low levels of human development tend to spend more on defence rather than social sectors.

Interesting Points:

- The Government of India has introduced **Beti Bachao Beti Padhao** programme to address the issue of decline in **child sex ratio**.
- **Gross National Happiness (GNH):** Bhutan is the only country to use GNH as the measure of the country's progress. This simply means material progress cannot come at the cost of happiness. GNH encourages us to think of the spiritual, non-material and qualitative aspects of development.
- Pakistani economist **Dr Mahbub-ul-Haq** created the **Human Development Index** in **1990**. The **United Nations Development Programme** has used his concept of human development to publish the **Human Development Report annually since 1990**.
- The Human Development index and the Human Poverty index are two important indices to measure human development used by the UNDP.



Unit: III



5

Primary Activities

Human activities which generate income are known as **economic activities**. These are broadly grouped into primary, secondary, tertiary, and quaternary activities. Primary activities are directly dependent on environment as these refer to utilisation of earth's resources such as land, water, vegetation, building materials and minerals.

People engaged in primary activities are called **Red-Collar** workers due to the outdoor nature of their work.

Features of Hunting Gathering society: Hunting and Gathering:

The earliest human beings depended on their immediate environment for their sustenance. They subsisted on:

- Animals which they hunted.
- The edible plants which they gathered from forests in the vicinity.

The Gathering and hunting are the oldest economic activity known. These are carried out at different levels with different orientations.

Hunting:

- People located in **very cold and extremely hot climates** survived on hunting.
- The people in the coastal areas still catch fish though fishing has experienced modernisation due to technological progress.
- The early hunters **used primitive tools** which are **made of stones, twigs or arrows**.

Gathering:

- The Gathering is practised in regions **with harsh climatic conditions**. So, the number of animals killed was limited. It often **involves primitive societies**, who extract, both plants and animals to satisfy their needs for food, shelter, and clothing.
- This type of activity **requires a small amount of capital investment** and operates at very low level of technology. The yield per person is very low and little or no surplus is produced.
- **It is practiced in:**
 - High latitude zones:** It includes northern Canada, northern Eurasia and southern Chile.
 - Low latitude zones:** It includes the Amazon Basin, tropical Africa, Northern fringe of Australia and the interior parts of Southeast Asia.
- In **modern times** some gathering is **market oriented and has become commercial**. Gatherers collect valuable plants such as leaves barks of trees and medicinal plants and after simple processing sell the products in the market.
- **Uses of various parts of the plants:** The bark is used for quinine, tannin extract and cork— leaves supply materials for beverages, drugs, cosmetics, fibres, thatch, and fabrics; nuts for food and oils and tree trunk yield rubber, balata, gums, and resins.

Gathering has little chance of becoming important at the global level as products of such an activity cannot compete in the world market.

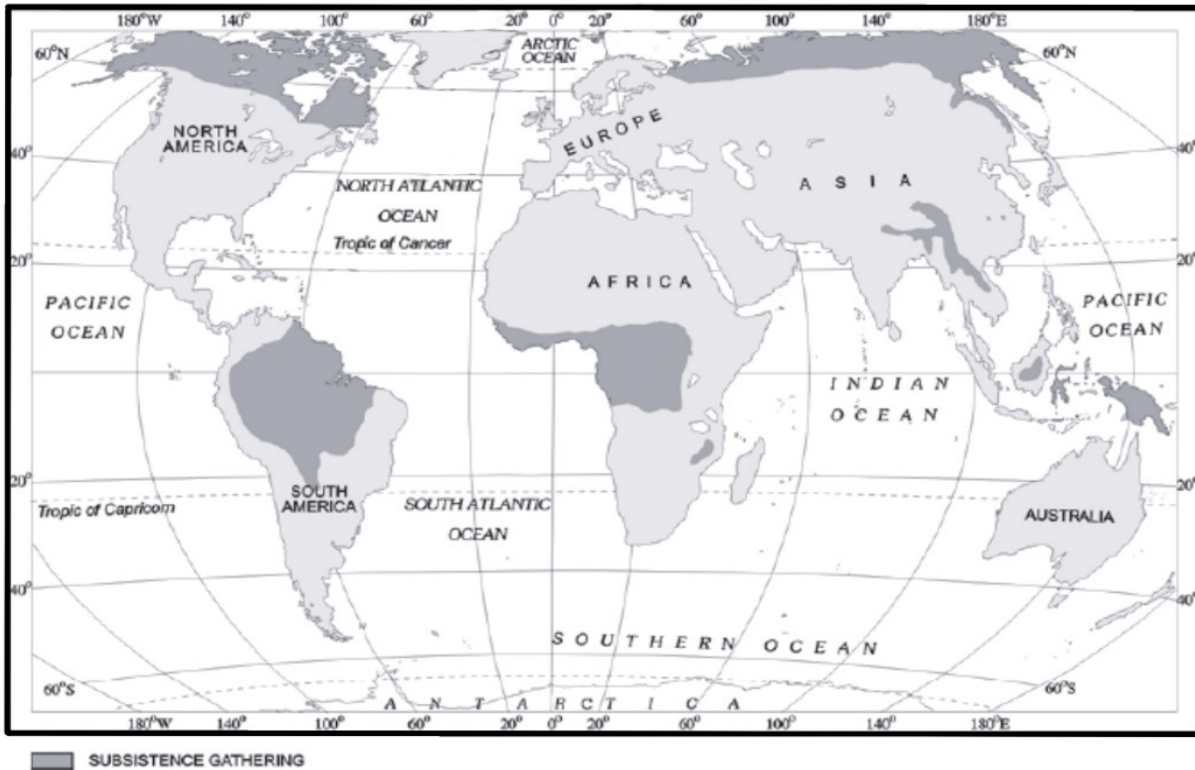


Fig. 5.1: Areas of Subsistence Gathering

Pastoralism:

People living in different climatic conditions selected and **domesticated animals** found in those regions. Depending on the geographical factors, and technological development, animal rearing today is practised either at the subsistence or at the commercial level.

Nomadic Herding:

- Nomadic herding or pastoral nomadism is a **primitive subsistence activity**, in which the **herders rely on animals** for food, clothing, shelter, tools and transport. They **move from one place to another** along with their livestock, depending on the amount and quality of pastures and water.
- Each nomadic community occupies a well-identified territory as a matter of tradition.
- A wide variety of animals is kept in different regions.
 - In **tropical Africa**, cattle are the most important livestock.
 - In **Sahara and Asiatic deserts**, sheep, goats, and camel are reared.
 - In the **mountainous areas of Tibet and Andes**, yak and llamas are domesticated.
 - In the **Arctic and sub-Arctic areas**, reindeer is the most important animal.
- Pastoral nomadism is associated with three important regions.
 - **Core region:** It extends from the **Atlantic shores of North Africa**

eastwards across the Arabian Peninsula into Mongolia and Central China.

- **Second region:** It **extends over the tundra region of Eurasia**.
- **Third region:** In the **Southern Hemisphere**, there are **small areas in South-west Africa** and on the **island of Madagascar**.
- Movement in search of pastures is undertaken either over vast horizontal distances or vertically from one elevation to another in the mountainous regions.
- The process of **migration from plain areas to pastures on mountains** during summers and again from **mountain pastures to plain areas** during winters is known as **transhumance**.
 - In **Himalayas**, Gujjars, Bakarwals, Gaddis and Bhotia's migrate from plains to the mountains in summers and to the plains from the high-altitude pastures in winters.
- In the **tundra regions**, the **nomadic herders move from south to north in summers** and from north to south in winters.
- **Number of pastoral nomads has been decreasing due to:**
 - Imposition of political boundaries
 - New settlement plans by different countries.

Commercial Livestock Rearing:

- Unlike nomadic herding, commercial livestock rearing is **more organised** and **capital intensive**.



Fig. 5.2: Areas of Nomadic Herding

- Commercial livestock ranching is essentially associated with **western cultures and is practised on permanent ranches.**
 - These ranches cover **large areas** and are divided into a number of parcels, which are fenced to regulate the grazing.
- Rearing of animals in ranching is organised on a **scientific basis.**
- When the grass of one parcel is grazed, animals are moved to another parcel. The number of animals in a pasture is kept according to the **carrying capacity** of the pasture.
- This is a specialised activity in which only **one type of animal** is reared.
- **Important animals:** sheep, cattle, goats, and horses.
- **Important Products:** Meat, wool, hides, and skin are processed and packed scientifically and exported to different world markets.
- The main emphasis is on breeding, genetic improvement, disease control and health care of the animals.
- **Important Countries:** New Zealand, Australia, Argentina, Uruguay, and United States of America.

Agriculture:

Agriculture is practised under multiple combinations of physical and socio-economic conditions, which gives rise to different types of agricultural systems.

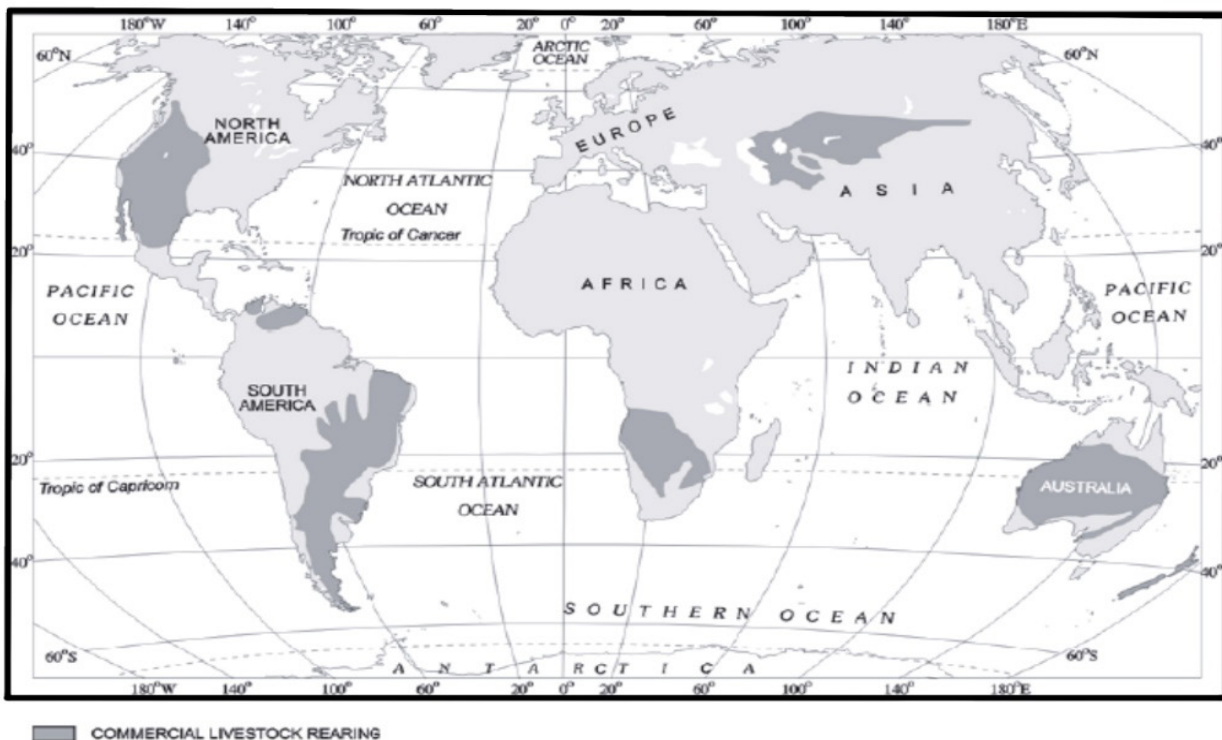


Fig. 5.3: Areas of Commercial Livestock Rearing

Main Agriculture Systems

Subsistence Agriculture:

Subsistence agriculture is one in which the **farming areas consume all**, or nearly so, of the **products locally grown**. It can be grouped in two categories — **Primitive Subsistence Agriculture** and **Intensive Subsistence Agriculture**.

Primitive Subsistence Agriculture:

- Primitive subsistence agriculture or **shifting cultivation** is widely practised by many tribes in the **tropics**, especially in Africa, south and central America and south east Asia.
- The **vegetation is usually cleared by fire**, and the **ashes add to the fertility** of the soil. Shifting cultivation is thus, also called **slash and burn agriculture**.
- The **cultivated patches** are very **small**, and cultivation is done with very **primitive tools** such as sticks and hoes.
- After sometime (3 to 5 years), the soil loses its fertility and the farmer shifts to another parts and clears other patch of the forest for cultivation.
- Examples:
 - **Jhuming** in **North eastern states of India**.
 - **Milpa** in **Central America and Mexico**.
 - **Ladang** in **Indonesia and Malaysia**.
- The cycle of jhum becomes less and less due to loss of fertility in different parcels.

Intensive Subsistence Agriculture:

It is largely found in **densely populated regions** of **monsoon Asia**.

Two types of intensive subsistence agriculture:

- **Intensive subsistence agriculture dominated by wet paddy cultivation:** It is characterised by **dominance of the rice** crop.
 - **Land holdings** are **very small** due to the high density of population.
 - Farmers work with the **help of family** labour leading to intensive use of land.
 - **Use of machinery is limited** and most of the agricultural operations are done by manual labour.
 - **Farm-yard manure** is used to maintain the **fertility** of the soil.
 - The **yield per unit area is high** but per **labour productivity is low**.
- **Intensive subsistence agriculture dominated by crops other than paddy:** Due to the difference in relief, climate, soil and some of the other geographical factors, it is not practical to grow paddy in many parts of monsoon Asia.
 - **Crops:**
 - ◆ Wheat, soyabean, barley and sorghum are grown in Northern China, Manchuria, North Korea, and North Japan.
 - ◆ **In India: Wheat is grown in western parts of the Indo-Gangetic plains** and millets are grown in dry parts of western and southern India.
 - Most of the characteristics of this type of agriculture are similar to those dominated by wet paddy except that irrigation is often used.

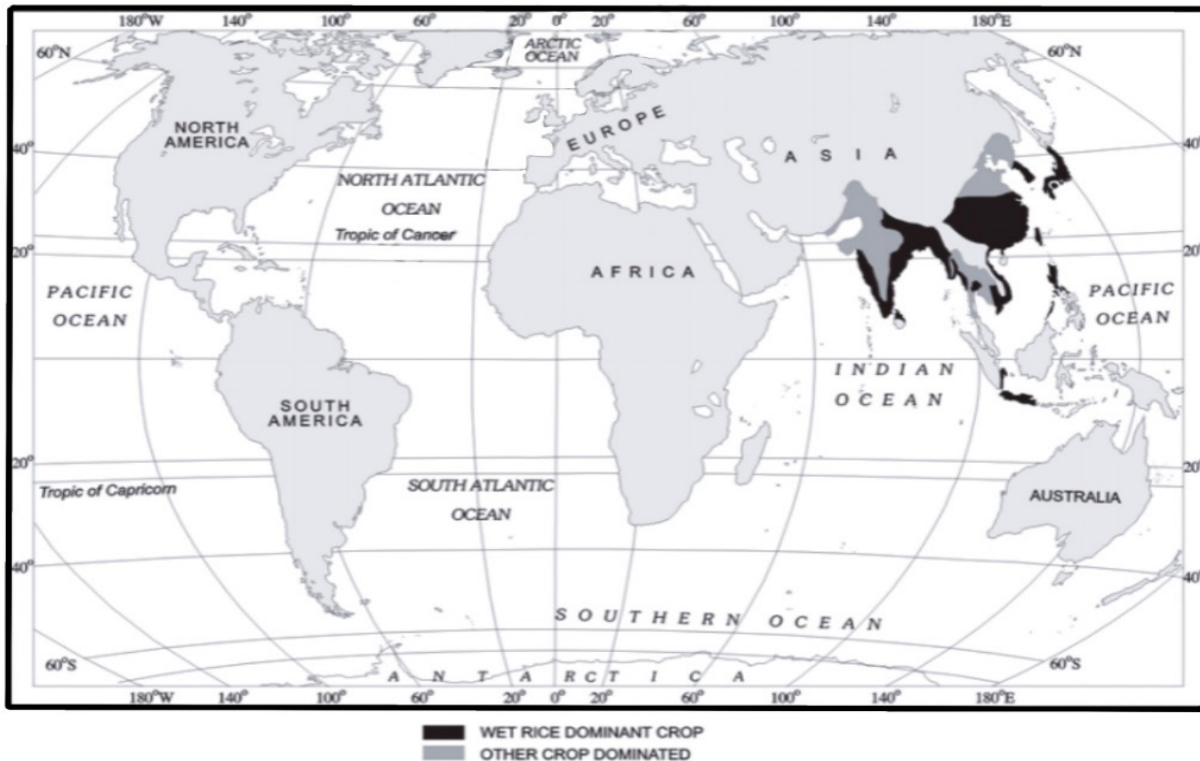


Fig. 5.4: Areas of Intensive Subsistence Farming

Plantation Agriculture:

- It was introduced by the Europeans in colonies situated in tropics.
 - The **French** established cocoa and coffee plantations in west Africa.
 - The **British** set up large tea gardens in India and Sri Lanka, rubber plantations in Malaysia and sugarcane and banana plantations in West Indies.
 - **Spanish and Americans** invested heavily in coconut and sugarcane plantations in the Philippines.
 - The **Dutch** once had monopoly over sugarcane plantation in Indonesia.
- **Important Plantation Crops:** Tea, coffee, cocoa, rubber, cotton, oil palm, sugarcane, bananas, and pineapples.

- **Characteristic features:** Large estates or plantations, large capital investment, managerial and technical support, scientific methods of cultivation, single crop specialisation, cheap labour, and a good system of transportation which links the estates to the factories and markets for the export of the products.
- Today, ownership of the majority of plantations has passed into the hands of the government or the nationals of the countries concerned.

Extensive Commercial Grain Farming:

- Commercial grain cultivation is practised in the **interior parts of semi-arid lands of the mid-latitudes.**

- **Wheat** is the **principal crop**, though other crops like corn, barley, oats, and rye are also grown.
- The **size of the farm is very large**, therefore entire operations of cultivation

from ploughing to harvesting are **mechanised**.

- There is **low yield per acre** but **high yield per person**.

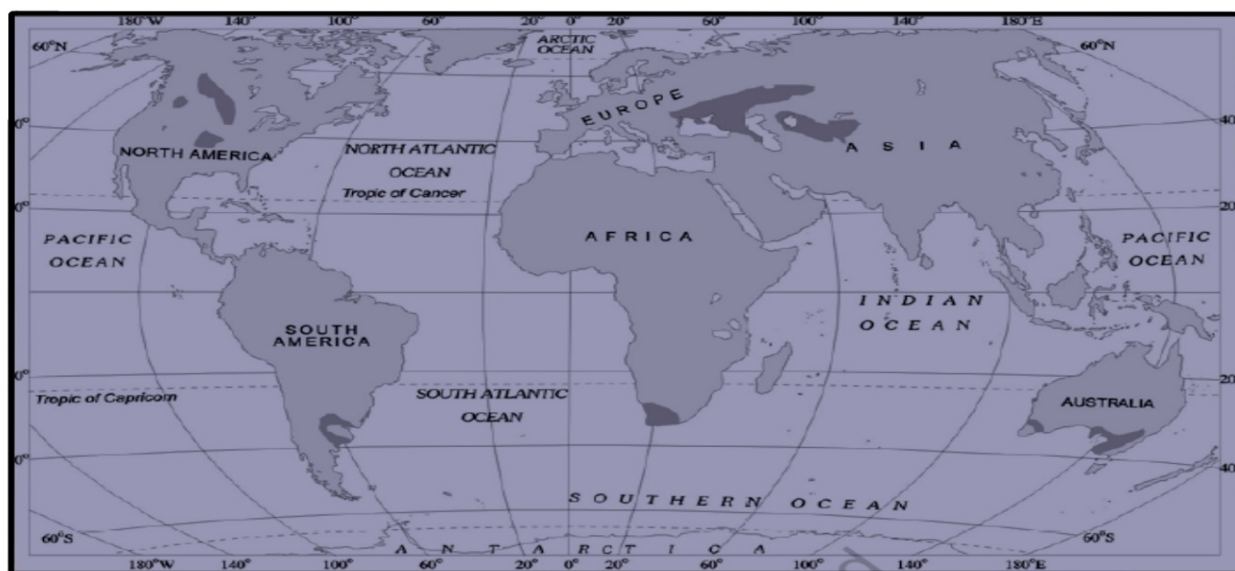


Fig. 5.5: Areas of Extensive Commercial Grain Farming

Mixed Farming:

- It is found in the **highly developed parts of the world** such as North-western Europe, Eastern North America, parts of Eurasia and the temperate latitudes of Southern continents.
- Mixed farms are **moderate in size**.
- **Crops associated:** Wheat, barley, oats, rye, maize, fodder, and root crops.
- Fodder crops are an important component of mixed farming.
- **Crop rotation** and **intercropping** play an important role in maintaining **soil fertility**.
- Equal emphasis is laid on crop cultivation and animal husbandry. Animals like

cattle, sheep, pigs and poultry provide the main income along with crops.

- It is characterised by **high capital expenditure** on farm machinery and building, extensive use of chemical fertilisers and green manures and also by the skill and expertise of the farmers.

Dairy Farming:

- Dairy is the **most advanced** and efficient type of rearing of milch animals.
- It is **highly capital intensive**. Animal sheds, storage facilities for fodder, feeding and milching machines add to the cost of dairy farming.

- Special emphasis is laid on cattle breeding, health care and veterinary services.
- It is **highly labour intensive** as it **involves rigorous care in feeding and milching**.
- There is **no off season** during the year as in the case of crop raising.
- It is practised mainly near **urban and industrial centres** which provide neighbourhood market for fresh milk and dairy products.
- The development of transportation, refrigeration, pasteurisation, and other preservation processes have increased the duration of storage of various dairy products.
- There are **three main regions** of commercial dairy farming.
 - The largest is **North Western Europe**.
 - The second is **Canada**.
 - The third belt includes **South Eastern Australia, New Zealand, and Tasmania**.

Mediterranean Agriculture:

- It is **highly specialised commercial** agriculture.
 - It is practised in the countries on **either side of the Mediterranean Sea** in Europe and in north Africa from Tunisia to Atlantic coast, southern California, central Chile, south western parts of South Africa and south and south western parts of Australia.
 - This region is an important supplier of **citrus fruits**.
 - **Viticulture or grape cultivation** is a **speciality of the Mediterranean region**.
 - **Best quality wines** in the world with distinctive flavours are produced from high quality grapes in various countries of this region.
 - The **inferior grapes are dried** into raisins and currants.
 - This region also produces olives and figs.
 - Its advantage is that **more valuable crops such as fruits and vegetables are grown in winters** when there is great demand in European and North American markets.
- #### **Market and Gardening and Horticulture:**
- It specialises in the **cultivation of high value crops** such as vegetables, fruits, and flowers, solely for the urban markets.
 - **Farms are small** and are **located where there are good transportation** links with the urban centre where high income group of consumers is located.
 - It is both **labour and capital intensive** and lays emphasis on the use of irrigation, HYV seeds, fertilisers, insecticides, greenhouses, and artificial heating in colder regions.
 - It is well **developed in densely populated** industrial districts of north west Europe, north eastern United States of America, and the Mediterranean regions.
 - The **farming is known as truck farming** in the regions where **farmers specialise in vegetables only**. Its name is truck farming because the distance of truck farms from the market is governed by the distance that a truck can cover overnight.

In addition to market gardening, a modern development in the industrial regions of Western Europe and North America is **factory farming**.

Livestock:

- Livestock, particularly poultry and cattle rearing, is done in stalls and pens, fed on manufactured feedstuff and carefully supervised against diseases. This requires heavy capital investment in terms of building, machinery for various operations, veterinary services and heating and lighting.
- One of the important features of poultry farming and cattle rearing is breed selection and scientific breeding.

Types of farming based on Farming Organisation**Co-operative Farming:**

- A **group of farmers form a co-operative society by pooling in their resources** voluntarily for more efficient and profitable farming.
- Individual farms remain intact, and farming is a matter of cooperative initiative.
- **Advantages:** Co-operative societies help farmers:
 - To procure all important inputs of farming.
 - Sell the products at the most favourable terms.
 - In processing of quality products at cheaper rates.
- Co-operative movement originated over a century ago and has been successful in many western European countries like Denmark, Netherlands, Belgium, Sweden, Italy etc. In Denmark, the movement has been so successful that practically every farmer is a member of a co-operative.

Collective Farming:

- **Basic Principle:** It is based on **social ownership of the means of production** and collective labour.
- **Collective farming** or the **model of Kolkhoz** was introduced in erstwhile **Soviet Union** to improve upon the inefficiency of the previous methods of agriculture and to boost agricultural production for self-sufficiency.
- The farmers used to **pool** in all their resources like land, livestock, and labour. However, they were allowed to retain very small plots to grow crops in order to meet their daily requirements.

Mining:

The discovery of minerals in the history of human development, is reflected in many stages in **terms of copper age, bronze age and iron age**. The actual development of mining began with the industrial revolution and its importance is continuously increasing.

Factors Affecting Mining Activity:

The profitability of mining operations depends on two main factors:

- **Physical factors:** It include the size, grade, and the mode of occurrence of the deposits.
- **Economic factors:** Such as the demand for the mineral, technology available and used, capital to develop infrastructure and the labour and transport costs.

Methods of Mining:

It is of two types: **Surface** and **Underground mining** depending on the mode of occurrence and the nature of the ore.

- **Surface Mining:**
 - It is also known as **open-cast mining**.
 - It is the **easiest and the cheapest** way of mining minerals that occur close to the surface. **Overhead costs** such as safety precautions and equipment are relatively **low**.
 - The **output is both large and rapid**.
- **Underground Mining:**
 - The underground mining method (**shaft method**) has to be used **when the ore lies deep below the surface**.
 - In this method, **vertical shafts have to be sunk**, from where underground galleries radiate to reach the minerals.
- Minerals are extracted and transported to the surface through these passages.
- It requires specially designed lifts, drills, haulage vehicles, ventilation system for safety and efficient movement of people and material.
- This **method is risky** as poisonous gases, fires, floods, and caving in lead to fatal accidents.

Interesting Points:

- The Chicle is the name of the part of the chewing gum after the flavour is gone. It is made from the milky juice of zapota tree.

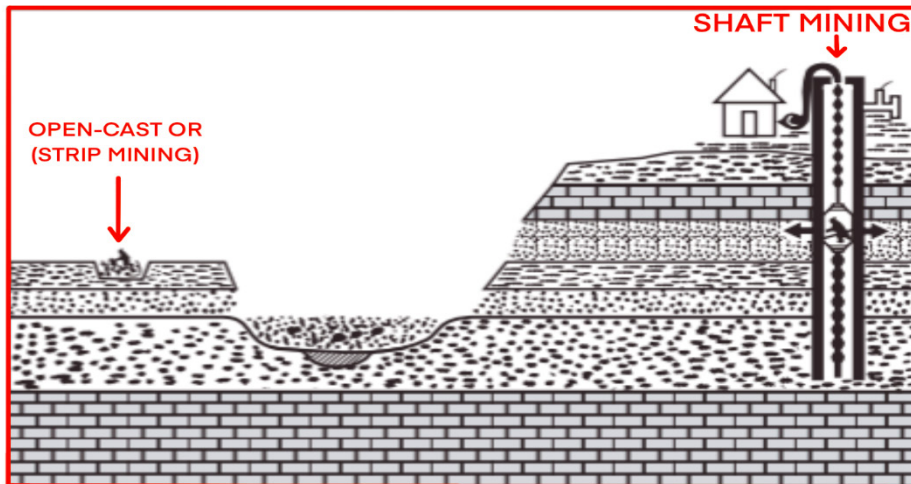


Fig. 5.6: Methods of Mining



6

Secondary Activities

Secondary activities add value to natural resources by transforming raw materials into valuable products. Secondary activities are concerned with manufacturing, processing, and construction (infrastructure) industries.

Value addition to Natural Resources by Secondary Activities:

- Cotton in the boll has limited use but after it is transformed into yarn becomes more valuable and can be used for making clothes.
- Iron ore cannot be used directly from the mines but after being converted into steel it gets its value.

Manufacturing:

It involves a **full array of production** from handicrafts to moulding iron and steel and stamping out plastic toys to assembling delicate computer components or space vehicles. In each of these processes, the **common characteristics** are the application of power, mass production of identical products and specialised labour in factory settings for the production of standardised commodities.

Characteristics of Modern Large-Scale Manufacturing

Specialisation of skills/ methods of production:

- Under the **'craft' method** factories produce only a few pieces which are made-to-order. So, the **costs are high**.
- Mass production involves production of large quantities of standardised parts by each worker performing only one task repeatedly.

Mechanisation:

- Mechanisation refers to **using gadgets which accomplish tasks**.
- **Automation** (without aid of human thinking during the manufacturing process) is the **advanced stage of mechanisation**. Automatic factories with feedback and closed loop computer control systems where machines are developed to 'think', have sprung up all over the world.

Technological Innovations:

Technological innovations through research and development strategy are an important aspect of modern manufacturing for quality control, eliminating waste and inefficiency, and combating pollution.

Organisational Structure and Stratification:

Modern manufacturing is characterised by:

- A complex machine technology.
- Extreme specialisation and division of labour for producing more goods with less effort, and low costs.
- Vast capital.
- Large organisations.
- Executive bureaucracy.

Uneven Geographic Distribution:

- Major concentrations of modern manufacturing have flourished in a few numbers of places. These nations have become the centres of economic and political power. However, in terms of the total area covered, manufacturing sites are much less conspicuous and concentrated on much smaller areas



than that of agriculture due to greater intensity of processes.

- Industries maximise profits by reducing costs. Therefore, **industries should be located** at points where the **production costs are minimum**.

Factors Responsible for Location of Industries

Access to Market:

- ‘Market’**: It means people who have a **demand for these goods** and also have the purchasing power (**ability to purchase**) to be able to purchase from the sellers at a place.
- The **existence of a market for manufactured goods** is the most important factor in the location of industries.
- The developed regions of Europe, North America, Japan and Australia provide large global markets as the purchasing power of the people is very high.
- The densely populated regions of South and South-east Asia also provide large markets.
- Some industries, such as aircraft manufacturing, have a global market. The arms industry also has global markets.

Access to Raw Material:

- Raw material used by industries should be **cheap and easy to transport**.
- Industries based on **cheap, bulky, and weight-losing** material (ores) are located close to the sources of raw material such as steel, sugar, and cement industries.
- Perishability** is a vital factor for the industry to be **located closer** to the source of the raw material.

- Agro-processing** and **dairy products** are processed close to the sources of farm produce or milk supply, respectively.

Access to Labour Supply:

- Labour supply is an important factor in the location of industries.
- Some types of manufacturing still **require skilled labour**. E.g., automobile industry.
- Increasing mechanisation, automation and flexibility of industrial processes have reduced the dependence of industry upon the labours.

Access to Source of Energy:

- Industries which use more power** are **located close to the source of the energy supply** such as the aluminium industry.
- Earlier coal was the main source of energy, today hydroelectricity and petroleum are also important sources of energy for many industries.

Access to Communication and Transportation Facilities:

- Speedy and efficient transport facilities** to carry raw materials to the factory and to move finished goods to the market are essential for the development of industries. The cost of transport plays an important role in the location of industrial units.
- Western Europe and eastern North America have a highly developed transport system which has always induced the concentration of industries in these areas.
- Modern industry is inseparably tied to transportation systems**.

- Improvements in transportation led to integrated economic development and regional specialisation of manufacturing.
- Communication is also an important need for industries for the exchange and management of information.

Government Policy:

- Governments adopt 'regional policies' to promote **'balanced' economic development** and hence set up industries in particular areas.

Access to Agglomeration Economies/ Links between Industries:

- Many **industries benefit** from **nearness to a leader-industry** and other industries. These benefits are termed as **agglomeration economies**. Savings are derived from the linkages which exist between different industries.

Foot loose industries:

- They are located in a wide variety of places.
- They are **not dependent on any specific raw material**, weight losing or otherwise.
- They largely depend on component parts which can be obtained anywhere.
- They produce in small quantity and also employ a small labour force.
- These are generally not polluting industries.
- The important factor in their location is accessibility by road

Classification of Industries:

Manufacturing industries are classified on the basis of their size, inputs/ raw materials, output/products, and ownership.

Industries based on Size: The amount of capital invested, number of workers employed, and volume of production determine the size of industry. Accordingly, industries may be classified into **household or cottage, small-scale** and **large-scale**.

Household Industries or Cottage Industries:

- It is the **smallest manufacturing unit**.
- The artisans **use local raw materials** and **simple tools** to produce everyday goods in their homes with the **help** of their **family members** or parttime labour.
- **Finished products** may be for **consumption in the same household** or, **for sale in local** (village) markets, or, for barter.
- Capital and transportation do not wield much influence as this type of manufacturing has **low commercial significance** and most of the tools are devised locally.
- Some common everyday products produced in this sector of manufacturing include foodstuffs, fabrics, mats, containers, tools, furniture, shoes, and figurines from wood lot and forest, shoes, thongs and other articles from leather, etc.

Small Scale Manufacturing:

- It is distinguished from household industries by its production techniques

and place of manufacture (a workshop outside the home/cottage of the producer).

- This type of manufacturing uses **local raw material, simple power -driven machines** and **semi-skilled labour**.
- It provides employment and raises local purchasing power. Therefore, countries like India, China, Indonesia, and Brazil, etc. have developed labour-intensive small-scale manufacturing in order to provide employment to their population.

Large Scale Manufacturing:

- It involves a **large market, various raw materials, enormous energy, specialised workers**, advanced technology, assembly-line mass production and large capital.
- This kind of manufacturing developed in the last 200 years, in the United

Kingdom, north-eastern U.S.A. and Europe.

- On the basis of the system of large-scale manufacturing, the world's major industrial regions may be grouped under two broad types, namely:
 - **Traditional large-scale** industrial regions which are **thickly clustered** in a few more developed countries.
 - **High-technology large scale** industrial regions which have **diffused** to less developed countries.

Industries Based on Inputs/Raw material

Agro-based:

- Agro processing involves the **processing of raw materials from the field** and the **farm into finished products** for rural and urban markets.

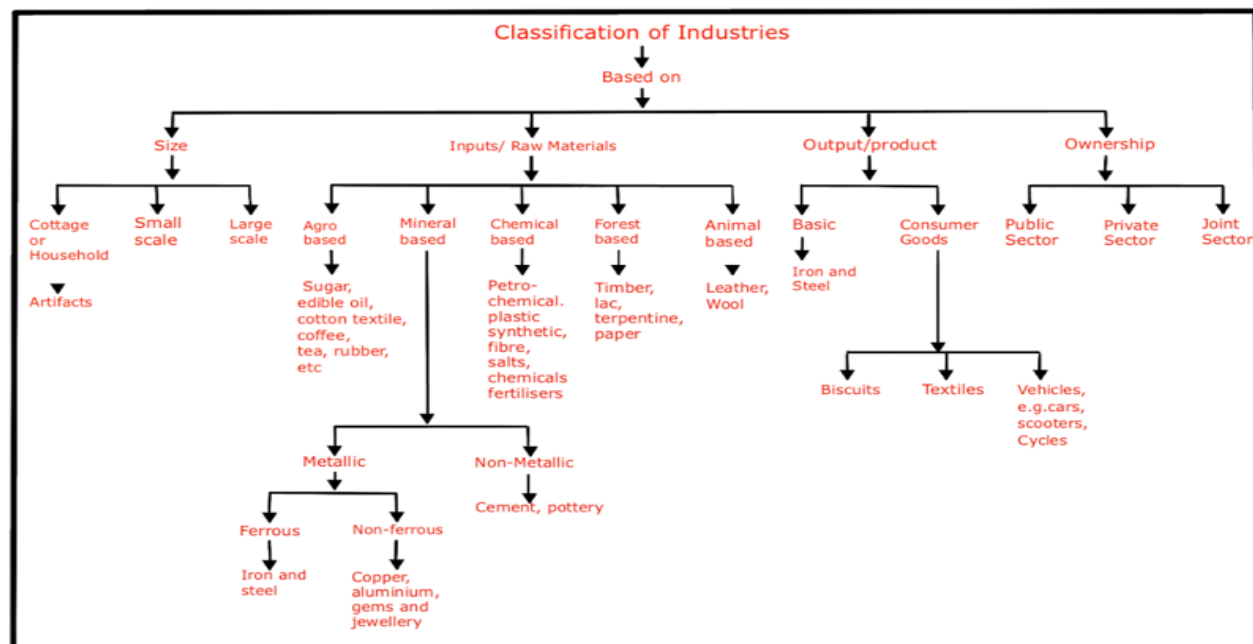


Fig. 6.1: Classification of Industries

- **Major Agro-processing Industries:** Food processing, sugar, pickles, fruits juices, beverages (tea, coffee, and cocoa), spices and oils fats and textiles (cotton, jute, silk), rubber, etc.
- **Food Processing:** Agro processing includes canning, producing cream, fruit processing and confectionery. While some preserving techniques, such as drying, fermenting and pickling, have been known since ancient times, these had limited applications to cater to the pre-Industrial Revolution demands.

Mineral based:

- These industries use **minerals as a raw material**.
- Some industries use ferrous metallic minerals which contain ferrous (iron), such as iron and steel industries but some use non-ferrous metallic minerals, such as aluminium, copper and jewellery industries.
- Many industries use non-metallic minerals such as cement and pottery industries.

Chemical based:

- Such industries **use natural chemical minerals**, e.g., mineral oil (petroleum) is used in petrochemical industry. Salts, sulphur, and potash industries also use natural minerals.
- Chemical industries are also based on raw materials obtained from wood and coal.
- **Examples of Chemical based industries:** Synthetic fibre, plastic, etc.

Forest Based:

The forests provide **many major and minor products** which are used as raw

material. Timber for furniture industry, wood, bamboo and grass for paper industry, lac for lac industries come from forests.

Animal Based:

Leather for leather industry and wool for woollen textiles are obtained from animals. Besides, ivory is also obtained from elephant's tusks.

Industries Based on Output/Products:

- **Basic Industries:** These are the industry whose **products are used to make other goods** by using them as raw materials. For example - Iron/steel machines for textile industry clothes for use by consumers.
- **Consumer Goods Industries:** They produced **goods which are consumed by consumers directly**. For example, industries producing breads and biscuits, tea, soaps and toiletries, paper for writing, televisions, etc. are consumer goods or non-basic industries.

Industries Based on Ownership:

- **Public Sector Industries:**
 - They are **owned and managed by governments**.
 - In India, there are number of Public Sector Undertakings (PSUs).
 - Socialist countries have many state-owned industries.
 - Mixed economies have both Public and Private sector enterprises.
- **Private Sector Industries:**
 - They are **owned by individual investors** and managed by private organisations.

- In capitalist countries, industries are generally owned privately.
- **Joint Sector Industries:**
 - They are managed by **joint stock companies** or sometimes the private and public sectors together establish and manage the industries.

Traditional Large-Scale Industrial Regions:

- These are **based on heavy industry**, often **located near coalfields**, and engaged in metal smelting, heavy engineering, chemical manufacture, or textile production. These industries are now known as **smokestack industries**.
- Traditional industrial regions can be recognised by:
 - **High proportion of employment** in manufacturing industry.
 - **High-density housing**, often of inferior type, and poor services.
 - **Unattractive environment**, for example, pollution, waste heaps, and so on.
 - Problems of unemployment, emigration and derelict land areas caused by closure of factories because of a worldwide fall in demand.

The Ruhr Coal field Region (Germany):

- This has been one of the **major industrial regions of Europe** for a long time. **Coal and iron and steel** formed the basis of the economy, but as the demand for coal declined, the industry started shrinking. Even after the iron ore was exhausted, the industry remained, using imported ore brought by waterways to the Ruhr.

- The **Ruhr region** is responsible for **80 per cent of Germany's total steel production**.
- Changes in the industrial structure have led to the decay of some areas, and there are problems of industrial waste and pollution.
- The future prosperity of the Ruhr is based less on the products of coal and steel and more on the new industries like the huge Opel car assembly plant, new chemical plants, universities.
- **Out-of-town shopping centres** have appeared resulting in a '**New Ruhr**' landscape.

Iron and Steel Industry:

- It forms the **base of all other industries** and, therefore, it is called a **basic industry**. It is basic because it **provides raw material for other industries** such as machine tools used for further production.
- It may also be called a **heavy industry because it uses large quantities of bulky raw materials** and its products are also heavy.
- Iron is **extracted from iron ore** by smelting in a blast furnace with carbon (coke) and limestone. The molten iron is cooled and moulded to form pig iron which is used for converting into steel by adding strengthening materials like manganese.
- The **large integrated steel industry is traditionally located close to the sources of raw materials** – iron ore, coal, manganese, and limestone – or at places where these could be easily brought, e.g., near ports.



- These are **less expensive** to build and operate and can be located near markets because of the abundance of scrap metal, which is the main input.
- Traditionally, most of the steel was produced at large integrated plants, but mini mills are limited to just one-step process – steel making.

Distribution: The industry is one of the most complex and **capital-intensive industries** and is concentrated in the advanced countries of North America, Europe, and Asia.

U.S.A:

- Most of the production comes from the north Appalachian region (Pittsburgh), Great Lake region (Chicago-Gary, Erie, Cleveland, Lorain, Buffalo and Duluth) and the Atlantic Coast (Sparrows Point and Morrisville).
- **Pittsburgh** area is now losing ground. It has now become the “**rust bowl**” of U.S.A.

Europe:

- **UK:** The important steel centres are Scun Thorpe, Port Talbot, Birmingham, and Sheffield.
- **Germany:** Duisburg, Dortmund, Dusseldorf, and Essen.
- **France:** Le Creusot and St. Etienne in France.
- **Russia:** Moscow, St. Petersburg, Lipetsk, Tula.
- **Ukraine:** Donetsk.

Asia: In Asia, the important centres include:

- **Japan:** Nagasaki and Tokyo-Yokohama.
- **China:** Shanghai, Tientsin and Wuhan.

- **India:** Jamshedpur, Kulti-Burnpur, Durgapur, Rourkela, Bhilai, Bokaro, Salem, Visakhapatnam and Sharavati.

Cotton Textile Industry:

- It has three sub-sectors i.e., **handloom, power loom and mill sectors**.
 - **Handloom Sector:** It is **labour-intensive** and provides employment to semi-skilled workers. It requires small capital investment. This sector involves spinning, weaving, and finishing of the fabrics.
 - **Power Loom:** In this sector, **machines are used** and becomes **less labour intensive** and the volume of production increases.
 - **Mill Sector:** Cotton textile mill sector is **highly capital intensive** and produces fine clothes in bulk.
- The Cotton textile manufacturing requires **good quality cotton** as raw material.
- India, China, U.S.A, Pakistan, Uzbekistan, Egypt produces more than half of the world's raw cotton. The U.K, NW European countries and Japan also produce cotton textile made from imported yarn. Europe alone accounts for nearly half of the world's cotton imports.
- The structure of industries changes with the scientific advancement and technological improvements. For example - Germany recorded constant growth in cotton textile industry since Second World War till the seventies but now it has declined. It has shifted to less developed countries where labour costs are low.

Concept of High Technology Industry:

- High technology, or **simply high-tech**, is the latest generation of manufacturing



activities. It is best understood as the application of intensive research and development (R and D) efforts leading to the manufacture of **products of an advanced scientific and engineering character**. For example - Robotics on the assembly line, Computer-Aided Design (CAD) and manufacturing, electronic controls of smelting and refining processes etc.

- **Features:** The high-tech industrial landscape is marked by **neatly spaced, low, modern, dispersed, office-plant-lab buildings**.
- High-tech industries which are regionally concentrated, self-sustained and highly specialised are called **Technopolis**. For example - The Silicon Valley near San Francisco and Silicon Forest near Seattle.

Interesting Points:

- **‘Manufacturing’ Industry and ‘Manufacturing Industry’:**
 - Manufacturing literally means **‘to make by hand’** but now it includes

goods ‘made by machines’. It is essentially a process which involves transforming raw materials into finished goods of higher value for sale in local or distant markets.

- As the term industry is comprehensive, it is also used as synonymous with ‘manufacturing’. When one uses terms like ‘steel industry’ and ‘chemical industry’ one thinks of factories and processes. But there are many secondary activities which are not carried on in factories such as the ‘entertainment industry’ and Tourism industry, etc.
- **Agri-Business:**
 - It is **commercial farming on an industrial scale** often financed by business whose main interests lie outside agriculture, for example, large corporations in tea plantation business.
 - Agri-business farms are mechanised, large in size, highly structured, reliant on chemicals, and may be described as ‘Agro-factories’.

7

Tertiary and Quaternary Activities

Health, education, law, governance, and recreation etc. require professional skills. These services require other theoretical knowledge and practical training. Tertiary activities are related to the service sector.

Tertiary Sector:

- **Manpower** is an **important component** of the service sector as most of the tertiary activities are performed by skilled labour, professionally trained experts, and consultants.
- In the initial stages of economic development, larger proportion of people worked in the primary sector. In a developed economy, the majority of workers get employment in tertiary activity and a moderate proportion is employed in the secondary sector.
- Tertiary activities include both **production and exchange**.
 - The **production** involves the '**provision of services**' that are 'consumed'. The **output** is indirectly measured in terms of **wages and salaries**.
 - **Exchange**, involves **trade, transport and communication facilities** that are used to overcome distance.
- Tertiary activities involve the commercial output of services rather than the production of tangible goods. Common examples are the work of a plumber, electrician, technician, launderer, etc.
- **Difference between Secondary activities and Tertiary activities:** The expertise provided by services relies more heavily on specialised skills, experience, and knowledge of the workers rather than on the production techniques, machinery, and factory processes.

Types of Tertiary Activities:

Trade, transport, communication, and services are some of the tertiary activities.

Trade and Commerce:

- **Trade is essentially buying and selling of items** produced elsewhere. All the services in retail and wholesale trading or commerce are specifically intended for profit.
- The towns and cities where all these **works take place** are known as **trading centres**.
- The rise of trading from barter at the local level to money-exchange of international scale has produced many centres and institutions such as trading centres or collection and distribution points. These centres can be divided into **rural and urban marketing centres**.

Rural Marketing Centres:

- Rural marketing centres cater to **nearby settlements** and are **quasi-urban centres**.
- They serve as trading centres of the most **rudimentary type**.
- The personal and professional services are not well-developed.
- These form **local collecting and distributing centres**.
- Most of these have mandis (wholesale markets) and also retailing areas.
- They are not urban centres per se but are significant centres for making available goods and services which are most frequently demanded by rural folk.
- **Periodic Market:**
 - **Periodic markets** in rural areas are found where there are **no regular**

markets and local periodic markets are organised at different temporal intervals.

- These may be weekly, biweekly markets from where people from the surrounding areas meet their temporally accumulated demand.
- These markets are held on specified dates and move from one place to another.

Urban Marketing Centres:

- They have more widely **specialised urban services**.
- They provide ordinary goods and services as well as many of the specialised goods and services required by people. Urban centres, therefore, offer **manufactured goods** as well as many specialised markets develop, e.g., markets for labour, housing, semi, or finished products.

- Services of educational institutions and professionals such as teachers, lawyers, consultants, physicians, dentists, and veterinary doctors are available.

Retail Trading:

- This is the **business activity** concerned with the **sale of goods directly to the consumers**.
- Most of the retail trading takes place in **fixed establishments** or **stores** solely devoted to selling.
- Street peddling, handcarts, trucks, door-to-door, mail-order, telephone, automatic vending machines and internet are examples of non-store retail trading.

Wholesale Trading:

- It constitutes **bulk business through numerous intermediary merchants and supply houses** and not through retail

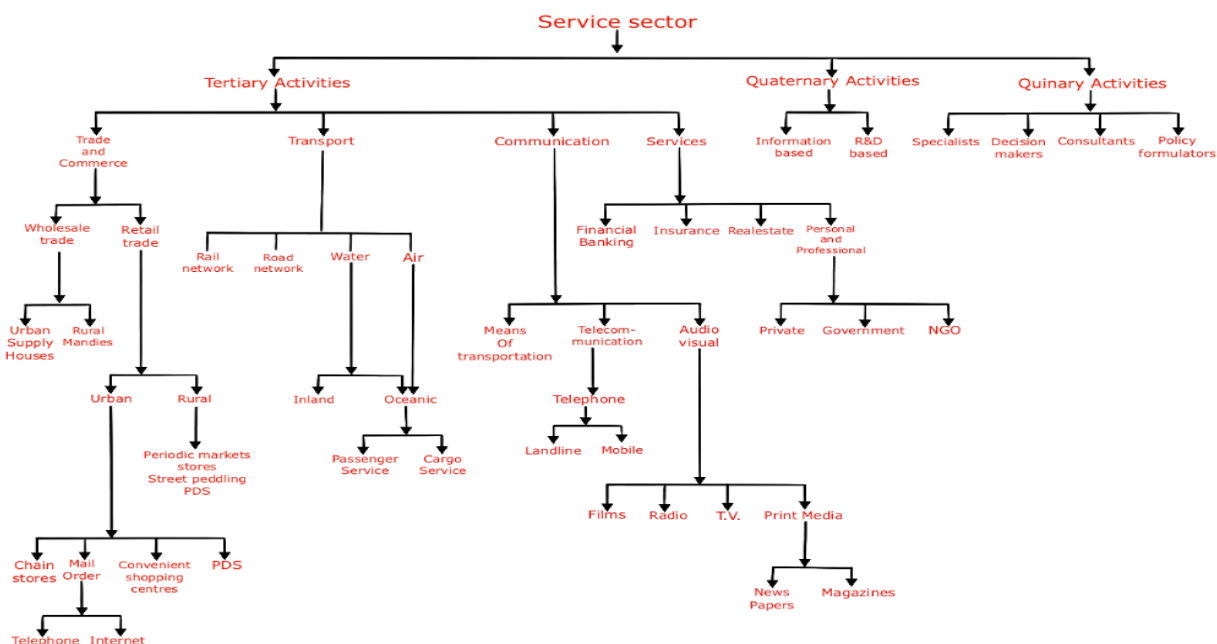


Fig. 7.1 Service Sector

stores.

- Some large stores including chain stores are able to buy directly from the manufacturers. However, most retail stores procure supplies from an intermediary source.
- Wholesalers often **extend credit to retail stores** to such an extent that the retailer operates very largely on the wholesaler's capital.

Transport:

- Transport is a **service or facility by which people**, materials and manufactured goods are **physically carried** from one location to another.
- It is an organised industry created to satisfy man's basic need of mobility.
- Modern society requires speedy and efficient transport systems to assist in the production, distribution, and consumption of goods. At every stage in this complex system, the **value of the material** is significantly **enhanced by transportation**.
- **Transport distance can be measured as:**
 - **km distance** or actual distance of route length
 - **time distance** or the time taken to travel on particular route.
 - **cost distance** or the expense of travelling on a route.
- **Distance**, in terms of time or cost, is the **determining factor** in selecting the mode of transport.
- **Isochrone** lines are drawn on a **map** to **join places equal in terms of the time taken** to reach them.

Factors Affecting Transport:

- **Demand** for transport is influenced by the **size of population**. The larger

the population size, the greater is the demand for transport.

- **Routes depend on location** of cities, towns, villages, industrial centres and raw materials, pattern of trade between them, nature of the landscape between them, type of climate, and funds available for overcoming obstacles along the length of the route.

Communication:

- Communication services involve the **transmission of words and messages, facts, and ideas**.
- The invention of writing preserved messages helped to make communication dependent on means of transport. These were actually carried by hand, animals, boat, road, rail, and air. All **forms of transport** are also referred to as **lines of communication**.
- Where the transport network is efficient, communications are easily disseminated.
- Certain developments, such as mobile telephony and satellites, have made communications independent of transport.

Telecommunication:

- The use of telecommunications is **linked to the development of modern technology**. It has revolutionised communications because of the **speed** with which **messages are sent**.
- The recent advancements like mobile telephony have made communications direct and instantaneous at any time and from anywhere.
- **Radio and television** also help to relay news, pictures, and telephone calls to vast audiences around the world

and hence they are termed as **Mass Media**. They are vital for advertising and entertainment. **Newspapers** are able to cover events in all corners of the world.

- Satellite communication relays information of the earth and from space.
- The internet has truly revolutionised the global communication system.

Services:

- Services occur at many **different levels**. Some are geared to industry, some to people, and some to both industry and people, e.g., the transport systems. **Low-order services**, such as grocery shops and laundries, are more **common and widespread** than high-order services or more specialised ones like those of accountants, consultants and physicians.
- Services are provided to individual consumers who can afford to pay for them. For example, the gardener, the launderers and the barber do primarily physical labour.
- They are often supervised or performed by governments or companies. For example - Making and maintaining highways and bridges, maintaining firefighting departments, and supplying or supervising education etc.
- **Professional Services:** They are primarily health care, engineering, law, and management.
- **Personal Services:** They are made available to the people to facilitate their work in daily life. They are employed in domestic services as housekeepers, cooks, and gardeners.

People Engaged in Tertiary Activities:

In more developed countries a higher percentage of workers is employed

in providing services as compared to less developed countries. The trend in employment in this sector has been rising.

Some examples of Tertiary Sector

Tourism:

- Tourism is travel undertaken for **purposes of recreation** rather than business.
- It has become the **world's single largest tertiary activity** in terms of registered jobs and total revenue contribution global GDP.
- **Generation of local employment:** Many local persons are employed to provide services like accommodation, meals, transport, entertainment, and special shops serving the tourists.
- Tourism fosters the growth of infrastructure industries, retail trading, and craft industries (souvenirs).

Tourist Regions:

- The **warmer places** around the Mediterranean Coast and the West Coast of India are some of the popular tourist destinations in the world.
- Others include winter sports regions, found mainly in mountainous areas, and various scenic landscapes and national parks.
- **Historic towns** also attract tourists because of the monument, heritage sites and cultural activities.

Factors Affecting Tourism:

- **Demand:**
 - The demand for holidays has increased rapidly.

- Improvements in the standard of living and increased leisure time, permit many more people to go on holidays for leisure.
- **Transport:**
 - The opening-up of tourist areas has been aided by improvement in transport facilities.
 - Travel is easier by car with better road systems.
 - More significant in recent years has been the expansion in air transport. For example, air travel allows fast travelling.

Tourist Attractions:

- **Climate:**
 - Most people from colder regions expect to have warm, sunny weather for beach holidays. This is one of the main reasons for the importance of tourism in Southern Europe and the Mediterranean lands.
 - **The Mediterranean climate** offers **almost consistently higher temperatures**, than in other parts of Europe, long hours of sunshine and low rainfall throughout the peak holiday season.
 - People taking winter holidays have specific climatic requirements, either higher temperatures than their own homelands, or snow cover suitable for skiing.
- **Landscape:** Many people like to spend their holidays in an **attractive environment**, which often means mountains, lakes, spectacular seacoasts and landscapes not completely altered by man.

- **History and Art:** The history and art of an area have **potential attractiveness**. People visit ancient or picturesque towns and archaeological sites, and enjoy exploring castles, palaces, and churches.
- **Culture and Economy:** These attract tourists with a penchant for **experiencing ethnic and local customs**.
- **Cost:** If a region provides for the needs of tourists at a cheap cost, it is likely to become very popular. For example - **Homestay** has emerged as a profitable business such as **heritage homes** in Goa, Madikere and Coorg in Karnataka.

Medical Tourism in India:

Medical tourism: When medical treatment is combined with international tourism activity, it lends itself to what is commonly known as **medical tourism**.

- India currently holds around 18% of the global medical tourism market. According to Ministry of Tourism's figures, medical tourism in India has the potential to cross the \$ 9 billion-mark, accounting for 20% of the global market share by 2020.
- World class hospitals located in metropolitan cities of India to cater to patients all over the world.
- Medical tourism brings abundant benefits to developing countries like India, Thailand, Singapore, and Malaysia.

- Beyond medical tourism, is the trend of outsourcing of medical tests and data interpretation.
 - Hospitals in India, Switzerland and Australia have been performing certain medical services – ranging from reading radiology images, to interpreting Magnetic Resonance Images (MRIs) and ultrasound tests.
 - Outsourcing holds tremendous advantages for patients, if it is focused on improving quality or providing specialised care.

Quaternary Activities:

- It involves: the collection, production, and **dissemination of information** or even the production of information.
- It centres around **research, development** and may be seen as an advanced form of services involving **specialised knowledge** and **technical skills**.
- The Quaternary Sector along with the Tertiary Sector has replaced most of the primary and secondary employment as the basis for economic growth. Over half of all workers in developed economies are in the **‘Knowledge Sector’** and there has been a very high growth in demand for and consumption of information-based services from mutual fund managers to tax consultants, software developers and statisticians.
- Personnel working in office buildings, elementary schools and university classrooms, hospitals and doctors’ offices, theatres, accounting, and brokerage firms all belong to this category of services.
- Quaternary activities can also be

outsourced like some of the tertiary functions. They are **not tied to resources**, affected by the environment, or necessarily localised by market.

Quinary Activities:

- The **highest level of decision makers or policy makers** perform quinary activities which are subtly different from the knowledge-based industries.
- They are services that focus on the **creation, re-arrangement and interpretation of new and existing ideas**, data interpretation and the use and evaluation of new technologies.
- It is often referred to as **‘gold collar’ professions**. They represent another subdivision of the tertiary sector representing special and highly paid skills of senior business executives, government officials, research scientists, financial and legal consultants, etc.
- Their importance in the structure of advanced economies far outweighs their numbers.

Outsourcing

Outsourcing or contracting out is giving **work to an outside agency** to improve efficiency and to reduce costs.

- When outsourcing involves transferring work to overseas locations, it is described by the **term off - shoring**, although both off - shoring and outsourcing are used together.
- Business activities that are outsourced include information

technology (IT), human resources, customer support and at times also manufacturing and engineering.

- **Data processing** is an IT related service easily be carried out in Asian, East European, and African countries, in these countries IT skilled staff with good English language skills are available at lower wages than those in the developed countries.
- **Overhead costs** are also **much lower** making it profitable to get job-work carried out overseas.
- **Creation of Jobs:** Outsourcing is coming to those countries where cheap and skilled workers are available. These are also out-migrating countries.
- New trends in quinary services include **knowledge processing outsourcing (KPO)** and 'home shoring'.
- **The KPO** industry is distinct from Business Process Outsourcing (BPO) as it involves highly skilled workers. It is information driven knowledge outsourcing. KPO enables companies to create additional business opportunities. Examples of KPOs include research and development (R and D) activities, e-learning, business research, intellectual property (IP) research, legal profession, and the banking sector.

Digital Divide:

- Opportunities emerging from the Information and Communication Technology based development is unevenly distributed across the globe. There are wide ranging economic, political, and social differences among countries.
- The deciding factor is how quickly countries can provide ICT access and benefits to its citizens.
- While developed countries in general have surged forward, the developing countries have lagged behind and this is known as the digital divide. For example - In a large country like India or Russia, it is inevitable that certain areas like metropolitan centres possess better connectivity and access to the digital world versus peripheral rural areas.

Interesting Points:

- **Stores:**
 - **Consumer cooperatives** were the **first of the large-scale innovations in retailing.**
 - **Departmental stores** delegate the responsibility and authority to departmental heads for purchasing of commodities and for overseeing the sale in different sections of the stores.
 - **Chain stores** are able to purchase merchandise most economically, often going so far as to direct the goods to be manufactured to their specification. They employ highly skilled specialists in many executive

tasks. They have the ability to experiment in one store and apply the results to many.

- **Network and Accessibility:**

- As transport systems develop, **different places are linked together to form a network**. Networks are made up of nodes and links.
- **A node** is the **meeting point of two or more routes**, a point of origin, a point of destination or any sizeable town along a route, every road that **joins two nodes** is called a **link**.
- A developed network has many links, which means that places are well-connected.





8

Transport and Communication

Natural resources, economic activities and markets are rarely found in one place. Transport, communication, and trade establish links between producing centres and consuming centres.

Transport:

- Transport is a service or facility for the **carriage** of persons and goods from **one place to the other** using humans, animals, and different kinds of vehicles. Such movements take place over land, water, and air.
- **Types of Transport: Land Transport**, the shipping and **waterways, airways** and **Pipelines**.
- The transportation is an **organised service industry** created to satisfy the basic needs of society. It includes transport arteries, vehicles to carry people and goods, and the organisation to maintain arteries, and to handle loading, unloading and delivery.
- Assured and speedy transportation, along with efficient communication, promote cooperation and unity among scattered peoples.

Transport Network: Several places (nodes) joined together by a series of routes (links) to form a pattern.

Modes of Transportation:

- The principal modes of world transportation are land, water, air and pipelines. These are used for **inter-regional** and **intra-regional transport**, and each one (except pipelines) carries both passengers and freight.

- The significance of a **mode** depends on the **type of goods and services** to be transported, costs of transport and the mode available.
 - **International movement** of goods is handled by **ocean freighters**.
 - **Road transport** is **cheaper** and **faster over short distances** and for door-to-door services.
 - **Railways** are most suited for **large volumes of bulky materials** over **long distances** within a country.
 - **High-value**, light and perishable goods are best moved by **airways**.
- In a well-managed transport system, various modes of transportation complement each other.

Land Transport: Most of the movement of goods and services takes place over land.

- In early days, humans themselves were carrier. The revolution in transport came about only after the **invention of the steam engine** in the eighteenth century.
- The **first public railway line** was opened in **1825 between the Stockton and Darlington** in Northern England and then onwards, railways became the most popular and fastest form of transport in the nineteenth century.
- The invention of the **internal combustion engine** revolutionised road transport in terms of road quality and vehicles (motor cars and trucks) plying over them.
- Among the newer developments in land transportation are pipelines, ropeways, and cableways. Liquids like mineral oil, water, sludge, and sewers are transported by pipelines.

- The old and elementary forms like the **human porter, pack animal, cart or wagon** are the most **expensive** means of transportation and large freighters are the cheapest.

Roads:

Road transport is the most **economical for short distances** compared to railways. Freight transport by road is gaining importance because it offers **door-to-door service**. The **highest road density and the highest number of vehicles are registered in North America** compared to Western Europe.

Issues in Road Transport:

- Unmetalled roads, though simple in construction, are **not effective** and serviceable for all seasons. During the rainy season these become unmotorable and even the metalled ones are seriously handicapped during heavy rains and floods.
- The rail kilometrage being small cannot serve the needs of vast and developing countries at a low cost.
- The quality of the roads varies greatly between developed and developing countries because road construction and maintenance **require heavy expenditure**.

Traffic Flows:

- When the road network cannot cope with the demands of traffic, congestion occurs. City roads suffer from chronic traffic congestion.
- Peaks (high points) and troughs (low points) of traffic flow can be seen on roads at particular times of the day, for

example, **peaks occurring** during the rush hour before and after work.

Highways:

- Highways are metalled **roads connecting distant places**.
- They are constructed in a manner for unobstructed vehicular movement. As such these are 80 m wide, with separate traffic lanes, bridges, flyovers, and dual carriageways to facilitate uninterrupted traffic flow.

Pattern of Highways:

- **In North America:** The highway density is high, about 0.65 km per sq. km. Every place is within 20 km distance from a highway.
- **Trans-Canadian Highway:** It links Vancouver in British Columbia (west coast) to St. John's City in Newfoundland (east coast) and the Alaskan Highway links Edmonton (Canada) to Anchorage (Alaska).
- **Pan-American Highway:** It will connect the countries of South America, Central America, and U.S.A.-Canada.
- **Trans Continental Stuart Highway:** It connects Darwin (north coast) and Melbourne via Tennant Creek and Alice Springs in Australia.
- **In Russia:** A dense highway network is developed in the industrialised region west of the Urals with Moscow as the hub.
- **In China:** The highways **criss-cross the country** connecting all major cities such as Tsungtso (near Vietnam boundary), Shanghai (central China), Guangzhou (south) and Beijing (north). A new highway links **Chengdu** with **Lhasa in Tibet**.

- **In India:**

- There are many highways linking the major towns and cities. For example, National Highway No. 7 (**NH 7**), connecting **Varanasi with Kanya Kumari**, is the **longest in the country**.
- The **Golden Quadrilateral (GQ)** or **Super Expressway** is underway to connect the four metropolitan cities — New Delhi, Mumbai, Bangalore, Chennai, Kolkata, and Hyderabad.

- **Border Roads:**

- Roads laid along **international boundaries** are called border roads. They play an important role in integrating people in remote areas with major cities and providing defence.
- All the countries have such road to transport goods to border village and military camps.

- **Railways:**

- Railways are a mode of land transport for **bulky goods** and passengers over **long distances**.
- The **railway gauges** classified as **broad (more than 1.5 m)**, **standard (1.44 m)**, **metre gauge (1 m)** and **smaller gauges**.
- The standard gauge is used in the U.K. The commuter trains are very popular in U.K., U.S.A, Japan, and India as these carry millions of passengers daily to and from in the city.

- **Railway Network in the World**

- **Europe:**

- It has one of the **densest rail networks** in the world.

- There are about **4,40,000 km of railways**, most of which is double or multiple-tracked.
- **Belgium** has the **highest density of 1 km** of railway for every 6.5 sq kms area.
- The industrial regions exhibit some of the highest densities in the world.
- **Important Rail Heads:** London, Paris, Brussels, Milan, Berlin, and Warsaw.
- Passenger transport is more important than freight in many of these countries.
- **Underground railways** are important in London and Paris.
 - **Channel Tunnel**, operated by **Euro Tunnel Group** through England, **connects London with Paris**.
- Trans-continental railway lines have now lost their importance to quicker and more flexible transport systems of airways and roadways.

- **Russia:**

- The railways account for about **90 per cent of the country's total transport** with a very dense network west of the Urals.
- Moscow is the most important rail head with major lines radiating to different parts of the country's vast geographical area.
- Underground railways and commuter trains are also important in Moscow.

- **North America:**

- It has one of the most extensive rail networks accounting for nearly **40 per cent** of the **world's total railway line**.
- The railways are used more for **long-distance bulky freight** like ores, grains, timber, and machinery than for passengers.

- The densest rail network is found in the highly industrialised and urbanised region of East Central U.S.A. and adjoining Canada.

Canada:

- The railways are in the **public sector** and distributed all over the sparsely populated areas.
- The transcontinental railways carry the bulk of wheat and coal tonnage.

Australia:

- It has about 40,000 km of railways, of which 25 per cent are found in New South Wales alone.
- The west-east Australian National Railway line runs across the country from Perth to Sydney.

New Zealand:

- Its railways are mainly in the North Island to serve the farming areas.

South America:

- The rail network is the densest in two regions, namely, the **Pampas** of Argentina and the **coffee growing region** of Brazil which together account for 40 per cent of South America's total route length.
- Only Chile, among the remaining countries has a considerable route length linking coastal centres with the mining sites in the interior.
- Peru, Bolivia, Ecuador, Colombia and Venezuela have short single-track rail-lines from ports to the interior with no inter-connecting links.
- There is only **one trans-continental rail** route linking Buenos Aires (Argentina) with Valparaíso (Chile) across the **Andes**

Mountains through the **Uspallata Pass** located at a height of 3,900 m.

Asia:

- The rail network is the **densest** in the **thickly populated areas** of Japan, China, and India.
- Other countries have relatively few rail routes.
- **West Asia** is the **least developed** in rail facilities because of vast deserts and sparsely populated regions.

Africa:

- Africa continent, despite being the second largest, has only 40,000 km of railways with South Africa alone accounting for 18,000 km due to the concentration of gold, diamond, and copper mining activities.
- **Important Continental Routes:**
 - **Benguela Railway:** It passes through Angola to Katanga-Zambia Copper Belt.
 - **Tanzania Railway:** It runs from the Zambian Copper Belt to Dar-es-Salaam on the coast.
 - The **Railway through Botswana and Zimbabwe** linking the landlocked states to the South African network.
 - **Blue Train:** It runs from **Cape Town to Pretoria** in the Republic of South Africa.
- In Algeria, Senegal, Nigeria, Kenya and Ethiopia, railway lines connect port cities to interior centres but do not form a good network with other countries.

Trans - Continental Railways:

They run **across the continent** and **link its two ends**. They were constructed

for **economic and political reasons** to facilitate long runs in different directions.

Important Trans – Continental Railways **Trans- Siberian Railways:**

- It is a major rail route of **Russia runs from St. Petersburg in the west to Vladivostok on the Pacific Coast** in the east passing through Moscow, Ufa, Novosibirsk, Irkutsk, Chita, and Khabarovsk.
- It is the most **important route in Asia** and the **longest (9,332 km) double-tracked** and electrified trans- continental railway in the world.
- It has helped in opening up its Asian region to West European markets.

- It runs across the Ural Mountains. Ob and Yenisei rivers, Chita is an important Agro centre and Irkutsk, a fur centre.
- There are connecting links to the south, namely, to Odessa (Ukraine), Baku on the Caspian Coast, Tashkent (Uzbekistan), Ulan Bator (Mongolia), and Shenyang (Mukden) and Beijing in China.

Trans- Canadian Railways:

- This **7,050 km long rail-line** in Canada runs from **Halifax in the east to Vancouver on the Pacific Coast** passing through Montreal, Ottawa, Winnipeg, and Calgary.



Fig. 8.1: Trans–Siberian Railway

- It was **constructed in 1886**, initially as part of an agreement to make British Columbia on the west coast join the Federation of States.
- **Economic significance:** It connected the **Quebec-Montreal Industrial Region** with the **wheat belt** of the Prairie Region and the Coniferous Forest region in the north. This line is the economic artery of Canada.
- A loop line from Winnipeg to Thunder Bay (Lake Superior) connects this rail-line with one of the important waterways of the world.
- Wheat and meat are the important exports on this route.

Union and Pacific Railway:

- It connects **New York on the Atlantic Coast to San Francisco on the Pacific Coast** passing through Cleveland, Chicago, Omaha, Evans, Ogden, and Sacramento.
- **Most valuable Exports:** Ores, grain, paper, chemicals, and machinery.

Australian Trans Continental Railways:

- It runs **West-East** across the southern part of the continent **from Perth on the west coast, to Sydney on the east coast** passing through Kalgoorlie, Broken Hill and Port Augusta.

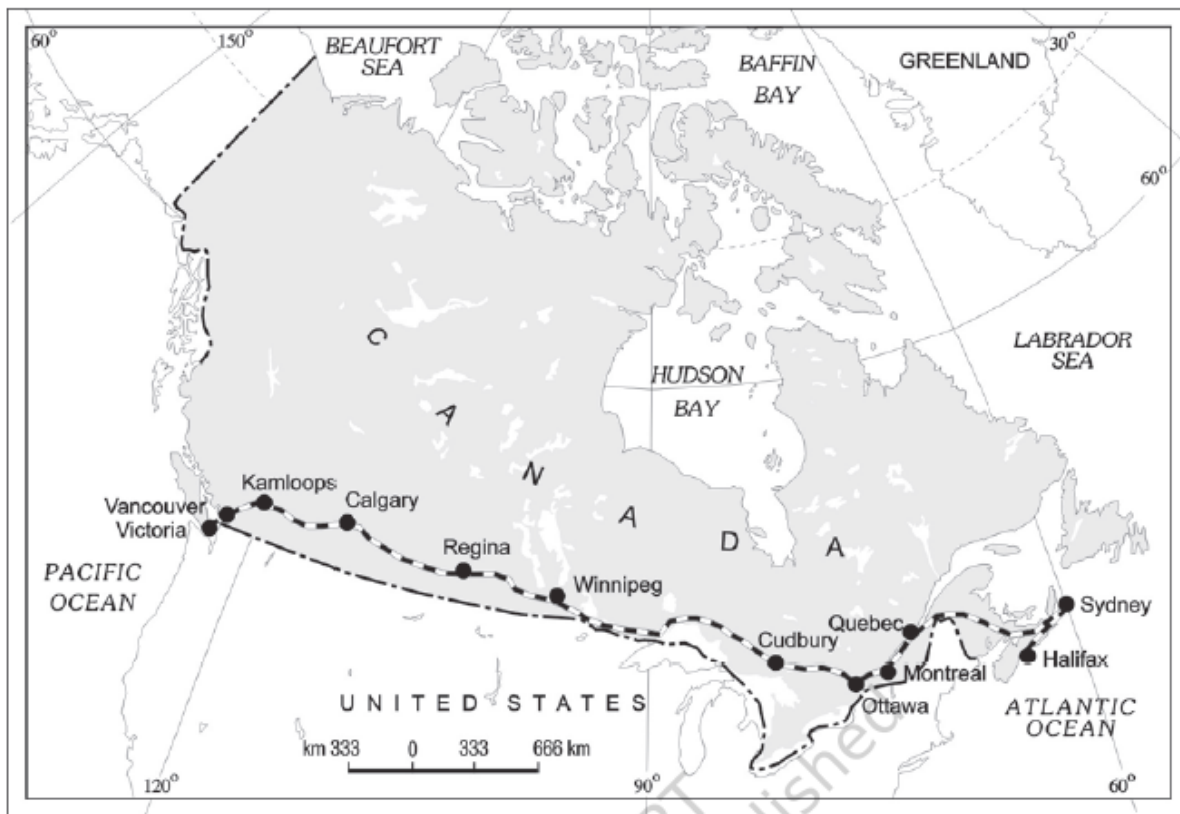


Fig. 8.2: Trans – Canadian Railway

The Orient Express:

- This line **runs from Paris to Istanbul** passing through Strasbourg, Munich, Vienna, Budapest, and Belgrade.
- The journey time from London to Istanbul by this Express is now reduced to 96 hours as against 10 days by the sea-route.
- **Chief Exports:** Cheese, bacon, oats, wine, fruits, and machinery.
- There is a proposal to build a Trans-Asiatic Railway linking Istanbul with Bangkok via Iran, Pakistan, India, Bangladesh, and Myanmar.

Water Transport:

- It does not require route construction.
- It is much cheaper because the friction of water is far less than that of land.
- The energy cost of water transportation is lower.

Water transport is divided into **sea routes** and **inland waterways**.

Sea Routes:

- The **oceans offer a smooth highway traversable in all directions** with no maintenance costs. Its transformation into a routeway by sea-going vessels is an important development.
- Compared to land and air, ocean transport is a **cheaper means of haulage** (carrying of load) **of bulky material over long distances** from one continent to another.
- Modern passenger liners (ships) and cargo ships are equipped with radar, wireless and other navigation aids.
- The development of refrigerated chambers for perishable goods, tankers and specialised ships has also improved

cargo transport. The use of containers has made cargo handling at the world's major ports easier.

Important Sea Routes

North Atlantic Sea Route:

- It links **North - Eastern U.S.A.** and **North - Western Europe**, the two industrially developed regions of the world.
- The **foreign trade over this route is greater** than that of the **rest of the world** combined. **One fourth of the world's foreign trade** moves on this route. It is, therefore, the **busiest in the world** and otherwise, called the **Big Trunk Route**.
- Both the coasts have highly advanced ports and harbour facilities.

Mediterranean - Indian Ocean Sea Route:

- It passes through the **heart of the Old World** and **serves more countries and people than any other route**.
- **Important Ports on this route:** Port Said, Aden, Mumbai, Colombo, and Singapore.
- The construction of **Suez Canal has greatly reduced the distance and time** as compared to the earlier route through the Cape of Good Hope, which was longer than the route through Suez Canal.

Cape of Good Hope:

- It connects the highly industrialised Western European region with West Africa, South Africa, South-east Asia and the commercial agriculture and livestock economies of Australia and New Zealand.
- The volume of trade and traffic between both East and West Africa is on the

increase due to the development of the rich natural resources such as gold, diamond, copper, tin, groundnut, oil palm, coffee, and fruits.

Southern Atlantic Sea Route:

- It connects **West European and West African** countries with Brazil, Argentina, and Uruguay in **South America**.
- The traffic is **far less because of the limited development and population** in South America and Africa. Only south-eastern Brazil and Plata estuary and parts of South Africa have large-scale industries.
- There is also little traffic on the route between Rio de Janeiro and Cape Town because both South America and Africa have similar products and resources.

North Pacific Sea Route:

- Trade across the vast North Pacific Ocean moves by **several routes which converge at Honolulu**.
- The **direct route** on the **Great Circle links Vancouver and Yokohama** and reduces the travelling distance (2,480 km) by half.
- It links the ports on the west coast of North America with those of Asia. These are Vancouver, Seattle, Portland, San Francisco and Los Angeles on the American side and Yokohama, Kobe, Shanghai, Hong Kong, Manila, and Singapore on the Asian side.

South Pacific Sea Route:

- It connects Western Europe and North America with Australia, New Zealand and the scattered Pacific islands via the **Panama Canal**.

Coastal Shipping:

- Coastal shipping is a convenient mode of **transportation** with **long coastlines**, e.g., U.S.A, China and India.
- Shenzhen States in Europe are most suitably placed for coastal shipping connecting one member's coast with the other.
- If properly developed, coastal shipping **can reduce the congestion** on the land routes.

Shipping Canals:

The Suez and the Panama Canals are two vital man-made navigation canals or waterways which serve as gateways of commerce for both the eastern and western worlds.

Suez Canal:

- This canal had been constructed in **1869** in **Egypt between Port Said** in the North and **Port Suez** in the South linking the **Mediterranean Sea and the Red Sea**.
- It gives **Europe a new gateway to the Indian Ocean** and reduces direct sea-route distance between Liverpool and Colombo compared to the Cape of Good Hope route.
- It is a **sea-level canal without locks** which is about 160 km and 11 to 15 m deep.
- About 100 ships travel daily and each ship takes 10-12 hours to cross this canal.
- A railway follows the canal to Suez, and from Ismailia there is a branch line to Cairo.
- A navigable fresh-water canal from the Nile also joins the Suez Canal in Ismailia to supply fresh-water to Port Said and Suez.



Fig. 8.3: Suez Canal

Panama Canal:

- This canal **connects the Atlantic Ocean in the east to the Pacific Ocean in the west.**
- It has been constructed across the **Panama Isthmus** between Panama City and Colon by the U.S. government which purchased 8 km of area on either side and named it the Canal Zone.
- The Canal is about **72 km. long** and involves deep cutting for a length of 12 km.
- It has a **six-lock system** and ships cross the different levels (26 m up and down) through these locks before entering the Gulf of Panama.
- It shortens the distance between New York and San Francisco by 13,000 km

by sea. Likewise, the distance between Western Europe and the West-coast of U.S.A.

- The economic significance of this Canal is relatively less than that of the Suez. However, it is vital to the economies of Latin America.

Inland Waterways:

- Rivers, canals, lakes, and coastal areas have been important waterways since time immemorial. Boats and steamers are used as means of transport for cargo and passengers.
- **Factors responsible for developing inland waterways:**
 - Navigability width and depth of the channel.
 - Continuity in the water flow.
 - Transport technology in use.
- Rivers are the only means of transport in dense forests. Very heavy cargo like coal, cement, timber, and metallic ores can be transported through inland waterways.
- **Issues with Inland Waterways:** Competition from railways, lack of water due to diversion for irrigation, and their poor maintenance.

The following river waterways are some of the world's important highways of commerce:

Rhine Waterways:

- The **Rhine** flows through **Germany and the Netherlands**. It is navigable for 700 km from Rotterdam, at its mouth in the Netherlands to Basel in Switzerland. Ocean-going vessels can reach up to Cologne.

- The Ruhr river joins the Rhine from the east and flows through a rich coalfield.
- **Dusseldorf** is the **Rhine port** for this region.
- Huge tonnage moves along the stretch south of the Ruhr.
- This waterway is the world's **most heavily used**.
- It connects the industrial areas of Switzerland, Germany, France, Belgium, and the Netherlands with the North Atlantic Sea Route.

Danube Waterway:

- This important inland waterway serves **Eastern Europe**.
- The Danube river rises in the Black Forest and flows eastwards through many countries.
- It is navigable up to Tarna Severin.
- **Chief Export Items:** Wheat, maize, timber, and machinery.

Volga Waterway:

- Volga is one of the most important waterways of Russia.
- It provides a navigable waterway of 11,200 km and drains into the Caspian Sea.
- The Volga-Moscow Canal connects it with the Moscow region and the Volga-Don Canal with the Black Sea.

Great Lakes - St. Lawrence Seaway:

- The **Great Lakes of North America** Superior, Huron Erie and Ontario are connected by **Soo Canal and Welland Canal** to form an inland waterway.
- The estuary of St. Lawrence River, along with the Great Lakes, forms a unique commercial waterway in the northern part of North America.

- The **ports on this route like Duluth and Buffalo** are equipped with all facilities of ocean ports.
- The large oceangoing vessels are able to navigate up the river deep inside the continent to Montreal.
- Goods have to be trans-shipped to smaller vessels due to the presence of rapids. Canals have been constructed up to 3.5 m deep to avoid these.

Mississippi Waterways:

- The Mississippi-Ohio waterway connects the interior part of U.S.A. with the Gulf of Mexico in the south.
- Large steamers can go through this route up to Minneapolis.

Air Transport:

- It is the **fastest means of transportation, but it is very costly.**
- Being fast, it is preferred by passengers for **long-distance travel.**
- Valuable cargo can be moved rapidly on a world-wide scale.
- It is often the only means to **reach inaccessible areas.** The frictions created by mountainous snow fields or inhospitable desert terrains have been overcome.
- **Increase accessibility:** For example - The airplane brings varied articles to the Eskimos in Northern Canada unhindered by the frozen ground.
- The manufacturing of aircrafts and their operations require elaborate infrastructure like hangars, landing, fuelling, and maintenance facilities for the aircrafts.
- The **construction of airports** is also very **expensive** and has developed

more in highly industrialised countries where there is a large volume of traffic.

- Although, U.K. pioneered the use of commercial jet transport, U.S.A. developed largely post-War international civil aviation.
- **Supersonic aircraft** cover the **distance between London and New York** within three and a half hours.

Inter - Continental Routes:

- In the **Northern Hemisphere**, there is a **distinct east-west belt** of inter-continental air routes. Dense network exists in Eastern U.S.A., Western Europe, and Southeast Asia.
- New York, London, Paris, Amsterdam, Frankfurt Rome, Moscow, Karachi, New Delhi, Mumbai, Bangkok, Singapore, Tokyo, San Francisco, Los Angeles, and Chicago are the **nodal points where air routes converge** or radiate to all continents.
- Africa, Asiatic part of Russia and South America lack air services.
- There are **limited air services between 10-35 latitudes** in the **Southern hemisphere** due to sparser population, limited landmass and economic development.

Pipelines:

- Pipelines are used extensively to **transport liquids and gases** such as water, petroleum and natural gas for an **uninterrupted flow.**
- Cooking gas or LPG is supplied through pipelines in many parts of the world.
- It is also used to transport liquefied coal.

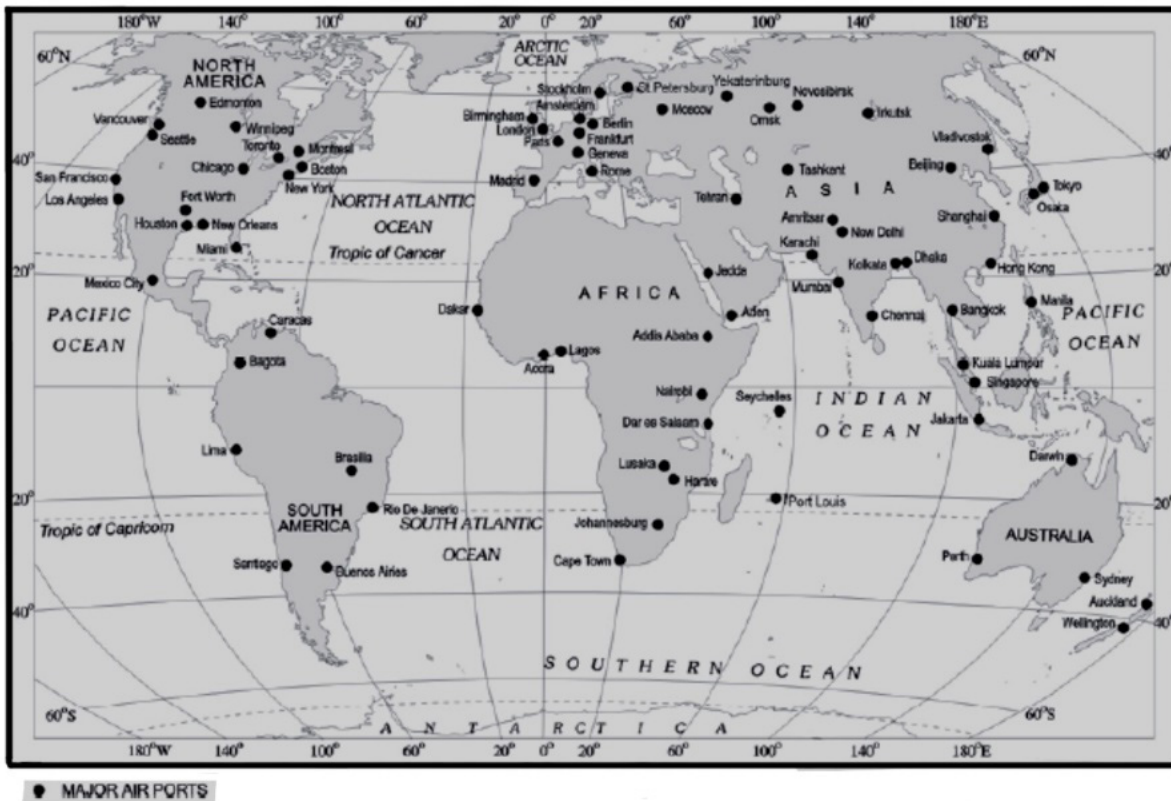


Fig. 8.4: Major Airports

- In **New Zealand**, **milk** is being supplied through pipelines from farms to factories.
- In **U.S.A.** there is a dense network of **oil pipelines from the producing areas to the consuming areas**. Big Inch is one such famous pipeline, which carries petroleum from the oil wells of the Gulf of Mexico to the North-eastern States.
- The proposed Iran-India via Pakistan international oil and natural gas pipeline will be the longest in the world.

Communications:

- Human beings have used different methods long-distance communications

like the **telegraph** and the **telephone**. The telegraph was instrumental in the colonisation of the American West.

- During the early and mid-twentieth century, the American Telegraph and Telephone Company (AT&T) enjoyed a monopoly over U.S.A.'s telephone industry.
- Firms centralised their functioning at city headquarters and located their branch offices in smaller towns.
- In developing countries, the use of cell phones, made possible by satellites, is important for rural connectivity.
- **Phenomenal pace of development:**
 - The **first major breakthrough** is the use of **Optic Fiber Cables (OFC)**.

- Faced with mounting competition, telephone companies all over the world soon upgraded their copper cable systems to include optic fiber cables. These allow large quantities of data to be transmitted rapidly, securely, and are virtually error-free.
- With the digitisation of information in the 1990s, **telecommunication** slowly **merged with computers** to form integrated networks termed as **Internet**.

Satellite Communication:

- Today Internet is the largest electronic network on the planet connecting about 1,000 million people in more than 100 countries.
- Communication through satellites emerged as a new area in communication technology since the 1970s after U.S.A. and former U.S.S.R. pioneered space research.
- These have **rendered the unit cost and time of communication invariant in terms of distance**. This means it costs the same to communicate over 500 km as it does over 5,000 km via satellite.
- **Strides of India in Satellite Development:**
 - **Aryabhata** was launched on **19 April 1979**, Bhaskar-I in 1979 and Rohini in 1980.
 - Bhaskar, Challenger and INSAT I-B have made long distance communication.

Cyber Space - Internet:

- **Cyberspace is the world of electronic computerised space** and is encompassed by the Internet such as the World Wide Web (www).

- It is the electronic digital world for communicating or accessing information over computer networks without physical movement of the sender and the receiver. It is also referred to as the **Internet**.
- The majority of the world's users of internet are in U.S.A., U.K., Germany, Japan, China and India.
- It will expand the contemporary economic and social space of humans through e-mail, e-commerce, e-learning and e-governance.
- **Internet together with fax, television and radio** will be **accessible to more and more people cutting across place and time**. It is these modern communication systems, more than transportation, that has made the concept of **global village** a reality.

Interesting Points:

- **Pack Animals:**
 - **Horses** are used as a draught animal even in the **Western countries**.
 - **Dogs and reindeer** are used in **North America, North Europe, and Siberia** to draw sledges over snow-covered ground.
 - **Mules** are preferred in the **mountainous regions**.
 - **Camels** are used for caravan movement in **deserts**.
 - In India, bullocks are used for pulling carts.
- **Urban Transport Solutions:** Higher Parking Fee Mass Rapid Transit (MRT) Improved Public Bus Service Expressways.

Trade means the voluntary exchange of goods and services. It is conducted at two levels: International and National. International trade is the exchange of goods and services among countries across national boundaries.

History of Trade:

- The **initial form of trade in primitive societies** was the **barter system**, where direct exchange of goods took place.
- In the olden times, before paper and coin currency came into being, rare objects with very high intrinsic value served as money, like, flintstones, obsidian, cowrie shells, tiger's paws, whale's teeth, dogs' teeth, skins, small tools, copper, silver, and gold.

History of International Trade:

- In ancient times, transporting goods over long distances was risky, hence trade was restricted to local markets. People then spent most of their resources on basic necessities and only the rich people bought jewellery, costly dresses and this resulted in trade of luxury items.
- The **Silk Route** is an early example of long-distance trade connecting **Rome to China** – along the 6,000 km route. The traders transported Chinese silk, Roman wool and precious metals and many other high value commodities from intermediate points in India, Persia, and Central Asia.
- After the **disintegration of the Roman Empire**, **European commerce grew** during **twelfth and thirteenth century** with the development of ocean-going warships trade between Europe

and Asia grew and the Americas were discovered.

- **Fifteenth century** onwards, the **European colonialism began** and along with trade of exotic commodities, a new form of trade emerged which was called **slave trade**.
 - The Portuguese, Dutch, Spaniards, and British **captured African natives and forcefully transported them to the newly discovered Americas** for their labour in the plantations.
 - **Slave trade** was a lucrative business for more than two hundred years till it was **abolished in Denmark in 1792, Great Britain in 1807 and United States in 1808**.
 - **After the Industrial Revolution:**
 - The **demand for raw materials** like grains, meat, wool also **expanded**, but **their monetary value declined** in relation to the manufactured goods.
 - The industrialised nations imported primary products as raw materials and exported the value-added finished products back to the non-industrialised nations.
 - In the **latter half of the nineteenth century**, regions producing **primary goods** were **no more important**, and industrial nations became each other's principal customers.
 - **During World War I and World War II** - The **countries-imposed trade taxes** and quantitative restrictions but later on General Agreement for Tariffs and Trade (which later became the World Trade Organisation), helped in reducing tariff.
- ## Reasons behind existence of International Trade:

- It benefits the world economy if different countries practise specialisation and division of labour in the production of commodities or provision of services.
- It is based on the principle of **comparative advantage, complementarity and transferability of goods and services** and in principle, should be mutually beneficial to the trading partners.
- In modern times, trade is the basis of the world's economic organisation and is related to the foreign policy of nations.

Basis of International Trade:

- **Difference in National Resources:** The world's national resources are **unevenly distributed** because of differences in their physical make up i.e., geology, relief soil and climate.
 - **Geological Structure:**
 - ◆ It determines the mineral resource base and topographical differences ensure diversity of crops and animals raised.
 - ◆ Lowlands have greater agricultural potential.
 - ◆ Mountains attract tourists and promote tourism.
 - **Mineral Resources:**
 - ◆ They are unevenly distributed the world over.
 - ◆ The availability of mineral resources provides the basis for industrial development.
 - **Climate:**
 - ◆ It influences the type of flora and fauna that can survive in a given region.
 - ◆ It also ensures diversity in the range of various products, e.g., wool production can take place in cold regions, bananas, rubber, and cocoa can grow in tropical regions.
- **Population Factors:** The size, distribution, and diversity of people between countries affect the type and volume of goods traded.
 - **Cultural Factors:**
 - ◆ Distinctive forms of art and craft develop in certain cultures which are valued all over the world e.g., China produces the finest porcelains and brocades. Carpets of Iran are famous while North African leather work and Indonesian batik cloth are prized handicrafts.
 - **Size of Population:**
 - ◆ Densely populated countries have large volume of internal trade but little external trade because most of the agricultural and industrial production is consumed in the local markets.
 - ◆ Standard of living of the population determines the demand for better quality imported products because with low standard of living only a few people can afford to buy costly imported goods.
- **Stage of Economic Development:**
 - At different stages of economic development of countries, the nature of items traded undergo changes.
 - In **agriculturally important countries, Agro products are exchanged for manufactured goods** whereas industrialised nations export machinery and finished products

and import food grains and other raw materials.

- **Extent of Foreign Investment:**

- Foreign investment can **boost trade in developing countries** which lack in capital required for the development of mining, oil drilling, heavy engineering, lumbering and plantation agriculture.
- By developing such capital-intensive industries in developing countries, the industrial nations ensure import of food stuffs, minerals and create markets for their finished products. This entire cycle steps up the volume of trade between nations.

- **Transport:**

- In olden times, lack of adequate and efficient means of transport restricted trade to local areas. Only high value items, e.g., gems, silk and spices were traded over long distances.
- With expansions of rail, ocean, and air transport, better means of refrigeration and preservation, trade has experienced spatial expansion.

Important Aspects of International Trade:

It has three very important aspects - Volume, sectoral composition, and direction of trade.

Volume of Trade:

- The actual tonnage of goods traded makes up the volume. However, services traded cannot be measured in tonnage. Therefore, the **total value of goods and services traded** is considered to be the **volume of trade**.

Composition of Trade:

- The nature of goods and services imported and exported by countries have undergone changes during the last century.
 - Trade of primary products was dominant in the beginning of the last century.
 - Later manufactured goods gained prominence.
 - Currently, though the manufacturing sector commands the bulk of the global trade, service sector which includes travel, transportation and other commercial services have been showing an upward trend.
- The volume of imports and exports of the world merchandise has been growing consistently over the years.
 - Manufactured goods contributed to the bulk of world merchandise exports.
 - Fuels and mining goods and agricultural goods are also important contributors of merchandise exports.
 - There is change in the share of continents in the world merchandise trade as Europe's contribution is declining while the contribution of Asian countries is growing.

Direction of Trade:

- Historically, the developing countries of the present used to export valuable goods and artefacts, etc.
 - During the nineteenth century there was a reversal in the direction of trade. European countries started exporting manufactured goods for exchange of foodstuffs and raw materials from their colonies.

- **Europe and U.S.A.** emerged as **major trade partners** in the world and were leaders in the trade of manufactured goods. Japan at that time was also the third important trading country.
- The world trade pattern underwent a drastic change during the second half of the twentieth century.
 - Europe lost its colonies while India, China and other developing countries started competing with developed countries.
 - The nature of the goods traded has also changed.

Balance of Trade:

- Balance of trade **records the volume of goods and services imported as well as exported** by a country to other countries.
- If the value of **imports** is **more** than the value of a country's exports, the country has **negative or unfavourable balance of trade**.
- If the value of **exports** is **more** than the value of imports, then the country has a **positive or favourable balance of trade**.
- **Implications of Balance of Trade:**
 - A negative balance would mean that the country spends more on buying goods than it can earn by selling its goods. This would ultimately lead to exhaustion of its financial reserves.

Types of International Trade:

- **Bilateral trade:** It is **done by two countries with each other**. They enter into agreement to trade specified commodities amongst them. For example, country A may agree to trade some raw material with agreement to

purchase some other specified item to country B or vice versa.

- **Multi-lateral trade:** It is **conducted with many trading countries**. The same country can trade with a number of other countries. The country may also grant the status of the "Most Favoured Nation" (MFN) on some of the trading partners.

Free Trade:

The act of **opening up economies for trading** is known as free trade or **trade liberalisation**. This is done by bringing down trade barriers like tariffs. Trade liberalisation allows goods and services from everywhere to compete with domestic products and services.

Issues with Free Trade:

- Globalisation along with free trade can adversely affect the economies of developing countries by **not giving equal playing field** by imposing conditions which are unfavourable.
- Free trade should not only let rich countries enter the markets but allow the developed countries to keep their own markets protected from foreign products.
- Countries also need to be cautious about **dumped goods** as along with free trade dumped goods of cheaper prices can **harm the domestic producers**.

Dumping: The practice of selling a commodity in two countries at a price that differs for reasons not related to costs is called dumping.

World Trade Organisation (WTO):

- The **General Agreement for Tariffs and Trade (GATT)** was **formed by some countries in 1948** to **liberalise the world** from high customs tariffs and various other types of restrictions.
- In 1994, it was decided by the member countries to set up a **permanent institution** for looking after the promotion of free and fair trade amongst nation and the **GATT was transformed** into the **World Trade Organisation** from 1st January 1995.
- It is the **only international organisation** dealing with the global rules of trade between nations.
- It sets the **rules for the global trading system** and resolves disputes between its member nations.
- It also covers trade in services, such as telecommunication and banking, and other issues such as intellectual rights.

Criticism on WTO:

- It is argued that free trade does not make ordinary people's lives more prosperous. It is actually **widening the gulf between rich and poor** by making rich countries richer because the influential nations in the WTO focus on their own commercial interests.
- Many developed countries have not fully opened their markets to products from developing countries.
- It is also argued that issues of health, worker's rights, child labour and environment are ignored.

Regional Trade Block:

- They have come up in order to **encourage trade between countries**

with geographical proximity, similarity, and complementarities in trading items and to curb restrictions on trade of the developing world.

- Today, 120 regional trade blocs generate 52 per cent of the world trade.
- These trading blocs developed as a response to the failure of the global organisations to speed up intra-regional trade.

Impact to International Trade:

- **Positive Aspect:** Undertaking international trade is **mutually beneficial to nations** if it leads to regional specialisation, higher level of production, better standard of living, worldwide availability of goods and services, etc.
- **Negative Aspect:** International trade can prove to be detrimental to nations of it **leads to dependence on other countries**, uneven levels of development, exploitation, and commercial rivalry leading to wars.
- **Other Impacts of Global Trade:** Global trade can impact everything from the environment to health and well-being of the people around the world. As countries compete to trade more, production and the use of natural resources spiral up, resources get used up faster than they can be replenished.
- **Impacts on Environment:** The marine life is also depleting fast; forests are being cut down and river basins sold off to private drinking water companies. Multinational corporations trading in oil, gas mining, pharmaceuticals and agri-business keep expanding their

Table 9.1: Major Regional Trade

Regional Blocs	Head Quarter	Member nations	Origin	Commodities	Other Areas of Cooperation
ASEAN (Association of South East Asian Nations)	Jakarta. Indonesia	Brunei Llarussalam. Cambodia. Indonesia. Lao s. Malaysia. Myanmar. Philippines. Singapore. Thailand and Vietnam	Aug. 1967	Agro products. rubber, palm on, rice. copra. coffee. minerals - copper, coal, nickel and tungsten. Energy - petroleum and natural gas and Software products	Accelerate economic growth. cultural development. peace and regional stability
CIS (Commonwealth of Independent States)	Minsk, Belarus	Armenia. Azerbaijan. Belarus. Georgia. Kazakhstan. Kyrgyzstan. Moldova. Russia. Tapia,Uut Turkmenistan. Ukraine and Uzbekistan.	—	Crude oil. natural gas. gold. cotton. fibre. aluminium	Integration and cooperation on matters of economics. defence and foreign policy
EU (European Union)	Brussels. Belgium	Austria. Belgium. Bulgaria. Croatia. Cyprus. Czech Republic. Denmark. Estonia. Finland. France. Germany. Greece. Hungary. Ireland. Italy. Latvia, Lithuania. Luxembourg. Malta. Poland, Portugal Romania. Slovakia. Slovenia. Spain. Sweden. Netherlands and United Kingdom	EEC- <i>Muth</i> 1057 Ell - Feb. 1992 loco	Agro products. MUWEIs chemicals wood, paper. transport vehicles. optical instruments. clocks - works of art. antiques	Single market with single currency

LAIA (Latin American Integration AssocMilan)	Montevideo. Uruguay	Argentina. Bolivia. Brazil. Columbia. Ecuador. Mexico. Paraguay. Peru. Uruguay and Venezuela	1994		
(North American (North Free Trade Association)		U.S.A.. Canada and Mexico	1940	Agro products. motor vehicles. automotive parts. computers. textiles	—
OPEC (Organisation of Petroleum Exporting Countries)	Vienna. Austria	Algeria. Indonesia. Iran. Iraq. Kuwait, Libya. Nigeria. Qatar. Saudi Arabia. UA.E. and Venezuela		Crude petroleum	Coordinate and unify petroleum policies.
SAFTA (South Asian Free Trade Agreement)		Bangladesh. Maid/nu. Bhutan. Nepal, India. Pakistan and Sri Lanka	Jan- 2006	—	Reduce tariffs on inter- regional trade



operations at all costs creating more pollution.

Gateways of International Trade Ports:

- The **chief gateways of the world** of international trade are the **harbours and ports**. Cargoes and travellers pass from one part of the world to another through these ports.
- The ports provide facilities of docking, loading, unloading and the storage facilities for cargo.
 - In order to provide these facilities, the port authorities make arrangements for maintaining navigable channels, arranging tugs and barges, and providing labour and managerial services.
- The importance of a port is judged by the size of cargo and the number of ships handled. The quantity of cargo handled by a port is an indicator of the level of development of its hinterland.

Types of Ports

Based on Cargo handled:

- **Industrial Ports:** These ports specialise in **bulk cargo**-like grain, sugar, ore, oil, chemicals, and similar materials.
- **Commercial Ports:** These ports handle general **cargo-packaged products and manufactured good**. These ports also handle passenger traffic.
- **Comprehensive Ports:** Such ports handle bulk and general cargo in **large volumes**. Most of the world's great ports are classified as comprehensive ports.

Based on Location:

• Inland Ports:

- These ports are located **away from the seacoast** and are **linked to the sea through a river or a canal**. For example, Manchester is linked with a canal; Memphis is located on the river Mississippi; Rhine has several ports like Mannheim and Duisburg; and Kolkata is located on the river Hoogli, a branch of the river Ganga.
- **Such ports** are **accessible to flat bottom ships or barges**.

• Out Ports:

- These are **deep water ports built away from the actual ports**.
- These serve the parent ports by receiving those ships which are unable to approach them due to their large size. For example - Athens and its out-port Piraeus in Greece.

Based on Specialised Function:

• Oil Ports:

- These ports deal in the **processing and shipping of oil**.
- Some of these are tanker ports and some are refinery ports. For example - Maracaibo in Venezuela, Esskhira in Tunisia, Tripoli in Lebanon are tanker ports and Abadan on the Gulf of Persia is a refinery port.

• Ports of Call:

- These are the **ports which originally developed as calling points on main sea routes** where ships used to anchor for refuelling, watering, and taking food items. Later, they developed into commercial ports.

For example - Aden, Honolulu, and Singapore.

- **Packet Station:**

- These are also known as **ferry ports**. These packet stations are exclusively concerned with the transportation of passengers and mail across water bodies **covering short distances**.
- These stations occur in pairs located in such a way that they face each other across the water body. For example - Dover in England and Calais in France across the English Channel.

- **Entrepot Ports:**

- These are **collection centres** where the goods are brought from different countries for export.
- Examples: Singapore is an entrepot for Asia. Rotterdam for Europe, and Copenhagen for the Baltic region.

- **Naval Ports:**

- These are ports which have only **strategic importance**.

- These ports **serve warships** and have repair workshops for them.
- Kochi and Karwar are examples of such ports in India.

Interesting Points:

- Every January after the harvest season **Jon Beel Mela** takes place in **Jagiroad, Guwahati** and it is possibly the only fair in India, where barter system is still alive.
- **WTO:**
 - Its **headquarters** are located in **Geneva, Switzerland**.
 - 164 countries were members of WTO as of December 2016.
 - **India** has been one of the **founder members** of WTO.
 - Afghanistan is the newest member joined in 2016.
- Hoogli river is a branch of the river Ganga.



Unit: IV



The study of human settlements is basic to human geography because the form of settlement in any particular region reflects human relationship with the environment.

Human Settlement:

It is defined as a **place inhabited more or less permanently**. The houses may be designed or redesigned, buildings may be altered, functions may change but settlement continues in time and space.

Classification of Settlements

Rural Urban Dichotomy:

- It is widely accepted that settlements can be differentiated in terms of rural and urban, but there is no consensus on what exactly defines a village or a town.
- Although population size is an important criterion, it is not a universal criterion since many villages in densely populated countries of India and China have population exceeding that of some towns of Western Europe and United States.
- At one time, people living in villages pursued agriculture or other primary activities, but presently in developed countries, large sections of urban populations prefer to live in villages even though they work in the city.
- The **basic difference between towns and villages is that in towns the main occupation** of the people is related to **secondary and tertiary sectors**, while in the **villages** most of the people are **engaged in primary occupations** such as agriculture, fishing, lumbering, mining, etc.

- Differentiations between rural and urban on the basis of functions are more meaningful even though there is no uniformity in the hierarchy of the functions provided by rural and urban settlements.

Types and Pattern of Settlement:

Settlements may also be classified by their shape, patterns types.

Classification by Shape:

- **Compact or Nucleated settlements:**
 - These settlements are those in which large number of **houses are built very close** to each other. Such settlements **develop along river valleys and in fertile plains**.
 - Communities are closely knit and share common occupations.
- **Dispersed Settlements:**
 - In these settlements, **houses are spaced far apart** and often interspersed with fields.
 - A cultural feature such as a place of worship or a market, binds the settlement together.
- **Rural settlements:**
 - These are most **closely and directly related to land**. They are **dominated by primary activities** such as agriculture, animal husbandry, fishing etc.
 - The settlements size is relatively small.

Factors affecting the Location of Rural Settlements

Water Supply:

- Usually, **rural settlements are located near water bodies** such as rivers, lakes, and springs.

- Sometimes the need for water drives people to settle in otherwise disadvantaged sites such as islands surrounded by swamps or low-lying riverbanks.
- Most water based 'wet point' settlements have many advantages such as water for drinking, cooking, and washing. Rivers and lakes can be used to irrigate farmland.
- Water bodies also influence diet of local people like people caught fish for diet.

Land:

- People choose to **settle near fertile lands** suitable for agriculture.
- In Europe villages grew up near rolling country avoiding swampy, low lying land while people in south east Asia chose to live near low lying river valleys and coastal plains suited for wet rice cultivation.

Upland:

- Upland which is not prone to flooding was chosen to prevent damage to houses and loss of life. Thus, **in low lying river basins people chose to settle on terraces and levees** which are "dry points".
- In tropical countries people build their houses on stilts near marshy lands to protect themselves from flood, insects, and animal pests.

Building Materials:

- The availability of building materials - wood, stone near settlements is another advantage.
- Early villages were built in forest clearings where wood was plentiful.

- Cave dwellings were important in loess areas of China and Mud bricks were used in African Savanna and the Eskimos, in polar regions, use ice blocks to construct igloos.

Defence:

- During the times of political instability, war, hostility of neighbouring groups villages was built on defensive hills and islands.
- In Nigeria, upstanding inselbergs formed good defensive sites.
- In India most of the forts are located on higher grounds or hills.

Planned Settlements:

- Sites that are not spontaneously chosen by villagers themselves, planned settlements are constructed by governments by providing shelter, water, and other infrastructures on acquired lands.
- The scheme of villagisation in Ethiopia and the canal colonies in Indira Gandhi canal command area in India are some good examples.

Rural Settlement Patterns:

Patterns of rural settlements reflect the way the houses are sited in relation to each other. The site of the village, the surrounding topography and terrain influence the shape and size of a village.

Classification of Rural Settlements:

- **On the basis of Setting:** The main types are plain villages, plateau villages, coastal villages, forest villages and desert villages.

- **On the basis of Functions:** There may be farming villages, fishermen's villages, lumberjack villages, pastoral villages etc.
- **On the basis of Forms or Shapes of the Settlements:** These may be a number of geometrical forms and shapes such as Linear, rectangular, circular star like, T-shaped village, double village, cross-shaped village etc.
 - **Linear Pattern:** In such settlement's houses are located along a road, railway line, river, canal edge of a valley or along a levee.
 - **Rectangular Pattern:** Such patterns are found in plain areas or wide inter montane valleys. The roads are rectangular and cut each other at right angles.
 - **Circular Pattern:** Circular villages develop **around lakes**, tanks and sometimes the village is planned in such a way that the central part remains open and is used for keeping the animals to protect them from wild animals.
 - **Star like Pattern:** Where several roads converge, star shaped settlements develop by the houses built along the roads.
 - T-shaped, Y-shaped, Cross-shaped or cruciform settlements:
 - **T -shaped** settlements develop at **tri-junctions** of the roads.
 - **Y-shaped** settlements emerge as the places where **two roads converge on the third one** and houses are built along these roads.

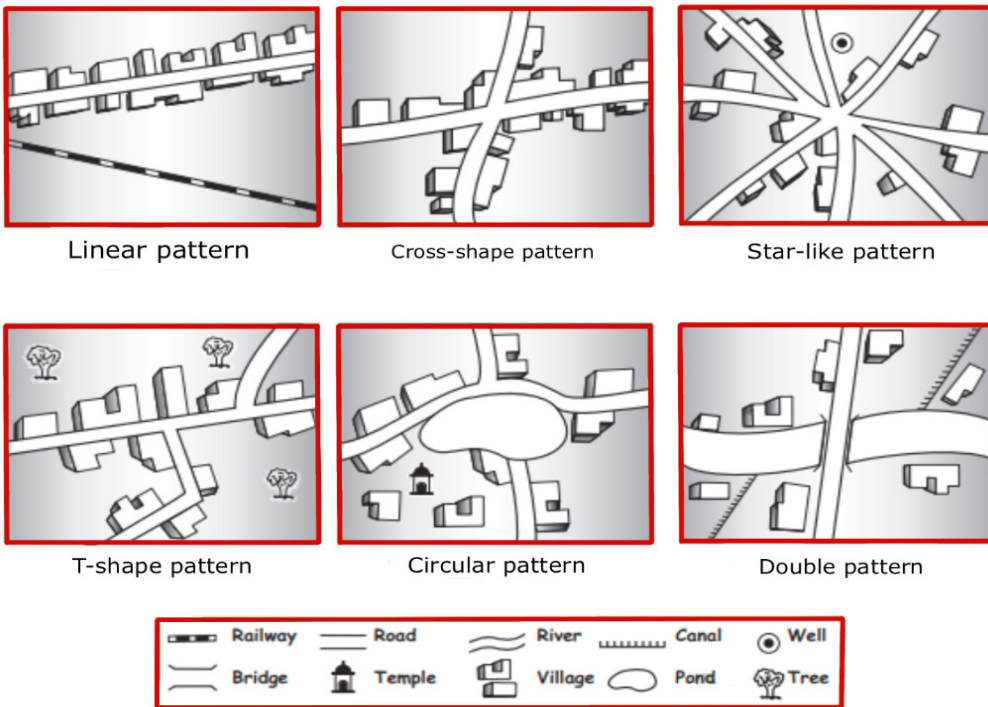


Fig. 10.1: Rural Settlement Patterns

- **Cruciform settlements** develop on the cross-roads and houses extend in all the four direction.
- **Double village:** These settlements extend on both sides of a river where there is a bridge or a ferry.

Problems of Rural Settlement: Rural settlements in the developing countries are large in number and poorly equipped with infrastructure.

- **Supply of Water:** People in villages, particularly in mountainous and arid areas have to **walk long distances** to fetch drinking water. Water borne diseases such as cholera and jaundice tend to be a common problem rural area.
- **Draught:** The countries of South Asia face conditions of drought very often. In absence of irrigation cropping pattern get affected.
- **Sanitation:** Absence of toilet and garbage disposal facilities cause health related problems.
- **House:** The houses made up of mud, wood, and thatch, remain susceptible to damage during heavy rains and floods, and require proper maintenance every year.
- **Roads:** Unmetalled roads and lack of modern communication network creates problems like during rainy season, the settlements remain cut off and pose serious difficulties in providing emergency services.
- **Health and Education:** Inadequate health and educational infrastructure for large rural population is an issue in developing countries. The problem is particularly serious where proper

villagisation has not taken place and houses are scattered over a large area.

Urban Development:

Rapid urban growth is a recent phenomenon. The **first urban settlement** to reach a **population of one million** was the **city of London by around. A.D. 1810**. Presently 54 per cent of the world's population lives in urban settlements compared to only 3 per cent in the year 1800.

Classification of Urban Settlements:

The definition of urban areas varies from one country to another. Some of the common basis of classification are size of population, occupational structure and administrative setup.

Population Size:

- The lower limit of the population size for a settlement to be designated as urban is 1,500 in Colombia, 2,000 in Argentina and Portugal, 2,500 in U.S.A. and Thailand, 5,000 in India etc.
- Besides the size of population, density of 400 persons per sq. km and share of non-agricultural workers are taken into consideration in India.

Occupational Structure:

- In some countries, such as India, the major economic activities in addition to the size of the population in designating a settlement as urban are also taken as a criterion.
- In Italy, a settlement is called urban, if more than 50 per cent of its economically productive population is engaged in

non-agricultural pursuits. India has set this criterion at 75 per cent.

Administration:

- The administrative setup is a criterion for classifying a settlement as urban in some countries.
- For example, in India, a settlement of any size is classified as urban, if it has a municipality, Cantonment Board or Notified Area Council.

Location:

- Location of urban centres is examined with reference to their function. For example, the sitting requirements of a holiday resort are quite different from that of an industrial town, a military centre, or a seaport.
- **Strategic towns** require **sites offering natural defence**; mining towns require the presence of economically valuable minerals; industrial towns generally need local energy supplies or raw materials; tourist centres require attractive scenery, or a marine beach, a spring with medicinal water or historical relics, ports require a harbour etc.
- Apart from site, the situation plays an important role in the expansion of towns. The urban centres which are located close to an important trade route have experienced rapid development.

Functions of the Urban Centres:

The earliest towns were centres of administration, trade, industry, defence, and religious importance. But the significance of defence and religion as differentiating functions has declined in general.

- Today, several new functions, such as, recreational, residential, transport, mining, manufacturing and most recently activities related to information technology are carried on in specialised towns.
- Some cities are classified on their dominant functions for example - Sheffield is an industrial city, London as a port city, Chandigarh as an administrative city and so on.
- Most of the early nineteenth-century fishing ports in England have now developed tourism. Many of the old market towns are now known for manufacturing activities.

Classification of Towns and Cities

Administrative Towns:

- **National capitals**, which **house the administrative offices of central governments**, such as New Delhi, Canberra, Beijing, Washington D.C., and London etc. are called **administrative towns**.
- **Provincial (sub-national) towns** can also have **administrative functions**, for example, Victoria (British Columbia), Albany (New York), Chennai (Tamil Nadu).

Trading and Commercial Towns:

- Agricultural market towns, such as, Winnipeg and Kansas City; banking and financial centres like Frankfurt and Amsterdam; large inland centres like Manchester and St Louis; and transport nodes such as, Lahore, Baghdad and Agra have been important trading centres.

Cultural Towns:

- Places of pilgrimage, such as Jerusalem, Mecca, Jagannath Puri and Varanasi etc.

are considered cultural towns. These urban centres are of great religious importance.

Classification of Towns based on Forms:

An urban settlement may **be linear, square, star or crescent shaped.**

- In fact, the form of the settlement, architecture and style of buildings and other structures are an outcome of its historical and cultural traditions.
- Towns and cities of developed and developing countries reflect marked differences in planning and development like in developed countries are planned, most urban settlements of developing countries have evolved historically with irregular shapes. For example, **Chandigarh** and **Canberra** are planned cities, while smaller town in India have evolved historically from walled cities to large urban sprawls.

Addis Ababa (The New Flowers):

- The name of **Ethiopian capital** Addis Ababa, as the name indicates (Addis-New, Ababa-Flower) is a 'new' city which was established in **1878**.
- The whole city is located on a **hill-valley topography**.
- The road pattern bears the influence of the local topography.

Types of Urban Settlement:

It depends on the size and the services available, and functions rendered.

Town:

- The concept of 'town' can best be understood with reference to 'village'.

- Population size is not the only criterion. Functional contrasts between towns and villages may not always be clear cut, but specific functions such as, manufacturing, retail and wholesale trade, and professional services exist in towns.

City:

- A city may be **regarded as a leading town**, which has outstripped its local or regional rivals.
- **Cities are much larger than towns** and have a greater number of economic functions.
- They tend to have transport terminals, major financial institutions, and regional administrative offices.
- When the population crosses the one million mark it is designated as a million city.

Conurbation:

- The **term conurbation** was coined by **Patrick Geddes** in 1915 and applied to a large area of urban development that resulted from the **merging of originally separate towns or cities**.
- Greater London, Manchester, Chicago, and Tokyo are examples.

Million Cities:

- There were 162 million cities in mid-70's and there was threefold increase in 2005 and the number reached to 438.
- In 2016, there were 512 cities with at least 1 million inhabitants globally.
- By 2030, a projected 662 cities will have at least 1 million residents.
- London, Paris, New York were some of the first million cities.

Megalopolis:

- This Greek word meaning “**great city**”, was popularised by **Jean Gottman** (1957) and signifies ‘**super- metropolitan’ region extending, as union of conurbations.**
- The urban landscape stretching from Boston in the north to south of Washington in U.S.A. is the best-known example of a megalopolis.

Distribution of Mega Cities:

A mega city or megalopolis is a general term for cities together with their suburbs with a population of more than 10 million people. New York was the first mega city.

Problems of Human Settlements in Developing Countries:

- They **lack infrastructure** such as, electricity, sewage disposal, health, and education facilities.
- They suffer from various problems, such as unsustainable concentration of population, congested housing and streets, lack of drinking water facilities.

Problems of Urban Settlement:

- In developing Countries cities are Unplanned, it creates severe congestion.
- Shortage of housing, vertical expansion and growth of slums are characteristic features of modern cities of developing countries.
- In many cities an increasing proportion of the population lives in substandard housing, e.g., slums and squatter settlements.
- In most million plus cities in India, one in four inhabitants lives in **illegal**

settlements, which are growing twice as fast as the rest of the cities.

Economic Problems:

- There is **large scale rural to urban migration** in search of jobs.
- The **enormous migrant population** generates a pool of **unskilled and semi-skilled labour force**, which is already saturated in urban areas.

Socio Cultural problems:

- Cities **fail to create adequate social infrastructure** due to insufficient financial resources.
- **Poor outreach of available educational and health facilities** to the urban poor.
- Lack of employment and education tends to **aggravate the crime rates.**
- **Male selective migration** to the urban areas distorts the sex ratio in these cities.

Environmental Problems:

- **Solid and liquid waste problems** is now becoming very serious issue in cities of developing countries.
- Many cities face **difficulty to provide the minimum required quantity of potable water** for domestic and industrial uses.
- Massive use of traditional fuel in the domestic as well as the industrial sector severely **pollutes the air.** The domestic and industrial wastes are either let into the general sewerages or dumped without treatment at unspecified locations.
- Huge concrete structures erected to accommodate the population and economic play a very conducive role to create **heat islands.**

Importance of Urbanisation:

- Cities, towns, and rural settlements are linked through the movements of goods, resources, and people.
- Urban-rural linkages are of crucial importance for the sustainability of human settlement.

Solutions for Urban Issues:

- It is urgent to eradicate rural poverty and to improve the quality of living conditions, as well as to create employment and educational opportunities in rural settlements.
- Full advantage must be taken of the complementary contributions and linkages of rural and urban areas by balancing their different economic, social, and environmental requirements.

Interesting Points:

- **Sub-Urbanisation:** It is a new trend of **people moving away from congested urban areas to cleaner areas** outside the city in search of a better quality of living.
- **Urbanisation:** It means the **increase in the proportion population of a country who live in urban areas.**
- **As per census of India 2011,** the **definition of urban area** is a place having a minimum population of 5,000

of density 400 persons per square kilometre (1,000/sq. mi) or higher, and 75% plus of the male working population employed in non-agricultural activities.

- Developed countries experienced rapid urbanisation during the nineteenth century. Developing countries experienced rapid urbanisation during the second half of the twentieth century.
- **Health City: World Health Organisation (WHO)** suggests that, among other things, a 'healthy city' must have:
 - A 'Clean' and 'Safe' environment.
 - Meets the 'Basic Needs' of 'All' its inhabitants.
 - Involves the 'Community' in local government.
 - Provides easily accessible 'Health' service.
- **Urban Strategy:** The **United Nations Development Programme (UNDP)** has outlined these priorities as part of its '**Urban Strategy**':
 - Increasing 'Shelter' for the urban poor. Provision of basic urban services such as 'Education', 'Primary Health care', 'Clean Water and Sanitation'.
 - Improving women's access to 'Basic Services' and government facilities.
 - Upgrading 'Energy' use and alternative 'Transport' systems.
 - Reducing 'Air Pollution'.